THE

COLD-WATER CURE,

ITS

USE AND MISUSE

EXAMINED.

BY

HERBERT MAYO, M.D., F.R.S.

FORMERLY SURGEON OF MIDDLESEX HOSPITAL, LONDON,

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HENRY RENSHAW, 356, STRAND.

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PREFACE.

——— Come quei, che con lena affannata
Uscito fuor del pelago alla riva
Si volge all' acqua perigliosa.—DANTE.

My knowledge of the cold-water cure originated in my having recourse to it myself, as a desperate remedy in a malady, which seemed hopeless. Through repeated attacks of a sort of rheumatism, my constitution appeared completely broken down. Already crippled in my limbs, preserving what power of exertion I still retained, only through the use of opium, and my indisposition still increasing, I looked forward to being before long worn out with suffering, and to death as a release. I could not bear the fatigue of a land journey, or I should have gone at once to Graefenberg; but Coblenz and Boppard might be reached from London by water—so I went to Marienberg in June 1842. On arriving there I was placed on the routine treatment of sweating and bathing. The immediate effect upon my health was strikingly beneficial; and in a week I was able to relinquish the use of opium. The rheumatism did not, however,

give way proportionably to my general improvement : the pains of the joints were indeed heightened : but this I had been taught to expect. I was then advised, and at length persuaded, to adopt a more active course of treatment, and accordingly, in addition, douched twice a day. This remedy, extremely agreeable and invigorating at the time, sensibly increased my strength, and I sanguinely anticipated towards autumn, that I was advancing to a prompt recovery. But before long it became evident that the strength my body gained was shared by the disease : my knees and feet became large and heavy with fresh effusion ; and however better in myself, I fell back in the use of my limbs, and seemed further than ever from the power of standing and walking. I now believe that the use of the douche was unsuitable to that stage of my disorders. I was, besides, unlucky enough to fall upon two other errors of treatment during the latter part of the autumn and winter ; through which I lost further ground ; and finally, in February 1843, was obliged temporarily to discontinue the cold-water cure.

By this time I had seen a good deal of hydropathy. I had seen one or two lives lost, as it appeared to me, through over-treatment; several patients after temporary improvement becoming worse ; others, who already gainers, would, I thought, have made greater progress, if they had been contented with doing less. In my own case I had been, though reluctantly, led to the adoption of more treatment than seemed to me rational ; and I had suffered through

it. But several English patients from Laubbach had in the mean time sought my advice, and the moderate courses of treatment, which alone I had felt justified in recommending to others, had been uniformly followed by benefit. So, gradually, I came to form opinions of my own as to the proper management of the cold-water cure, the general efficacy of which had been sufficiently proved to me in my own case by the advantage my health had derived, even while I was otherwise suffering from its misuse.

Being then confident that perseverance in the cold-water cure properly administered, would in time restore to me health and the use of my limbs, yet seeing that two or three years at least would be necessary for my recovery, and being of course anxious still to hold in any way to my profession, and believing that by practising the cold-water cure, not empirically but rationally, I might render service to some of my countrymen coming abroad to resort to it, I made an agreement with Dr. Schmitz, the proprietor of Marienberg, to act from June 1843, for the three ensuing years, as physician to an hydropathic establishment contiguous to Marienberg, to be made out of an old convent, called St. Martins, which Dr. Schmitz had expressed to me his intention of fitting up for some such purpose. This arrangement was advertised in the London newspapers in the spring of 1843, and several English were thus induced to come to Boppard to place themselves under my care. They were temporarily received into

Marienberg, St. Martin's not being ready, for his delay in preparing which Dr. Schmitz made first one then another plausible excuse. At length, when June arrived, Dr. Schmitz, already a gainer, directly and indirectly through my continued residence at his establishment, for whatever reason, declined to carry out our projected plan on the original terms; and when I expostulated with him, he declared to me, that the contract which he had drawn up, and which had been signed by us the preceding January, was not binding in law, and that he would not adhere to it; but that I was at liberty to remain at Marienberg the ensuing summer in the capacity of his assistant. I gave Dr. Schmitz two or three days' time to reflect upon the unjust course he meditated, and then took an opportunity of putting his intentions to the test. When, finding that he had deliberately determined to disavow and break the contract, which existed between us, I left his establishment of Marienberg, and removed to Mühlbad, another hydropathic institution in the neighbourhood of Boppard, the property of Dr. Heussner, who agreed to give me the means of receiving English patients under my care, such as I had stipulated for with Dr. Schmitz.

I naturally supposed myself quit of Dr. Schmitz. He had been pleased to break our bargain, and I had suffered him to do so with impunity. His next step, therefore, took me by surprise. When two months had elapsed, taking advantage of my having instituted no legal proceedings against himself, he

actually commenced an action against me, for having, as he alleged, abandoned the contract made between us the January preceding; when, as I have above stated, so far from being a willing party to this event, I had only left Marienberg, and that to my extreme annoyance and inconvenience, upon Dr. Schmitz's asserting that the contract between us was not good at law, and that he would not adhere to it. But I have every reason to be satisfied with the administration of justice in Prussia. The simple form of law in operation here allowed me to turn the tables upon Dr. Schmitz in the same action, which he commenced against me: and the judgment delivered by the court at Coblenz, in January 1844, accordingly was, that Dr. Schmitz's plaint for breach of contract against Mr. Mayo is unfounded, that Mr. Mayo's counterplaint of breach of contract against Dr. Schmitz is well founded, and that Dr. Schmitz is condemned to pay damages and the costs.

I am otherwise well satisfied with having changed my residence from Marienberg to Mühlbad. The situation of Mühlbad is more cheerful, the water we drink purer; the diet better, and approximated to the English way of living; and the proprietor, my colleague, Dr. Heussner, is a well-informed physician and a man of integrity and honour. And here I propose to remain some years, as I find my health continually improving, which I attribute in part to the influence of the dry air of this country; and as I am able to exercise my profession in an hydropa-

thic establishment, while still unfitted for pursuing it actively elsewhere.

If, some years ago, when in the enjoyment of health in London, I had prophetically dreamed a day such as I now pass here, and had told my family at breakfast, how I had imagined myself after severe illness dwelling on the banks of the Rhine, and recovering my health through, and finding employment in, prescribing for others, a new system, which consisted in cold-bathing and drinking cold-water, and which had been found so efficacious, that establishments for its administration were springing up all over Europe, and I had been able to describe in detail the machinery of the cold-water cure, how wild and fantastic, how ridiculous and amusing a doctor's dream it would have seemed. If such a dream had dwelt on my mind of the possible forecast of what was really to come to pass, not the least unlikely part of it to myself would have been, that after having been incapacitated by illness for active exertion, and having suffered what I have gone through, and having been forced to relinquish a professional career in London, which was full of interest and promise of success, I should have found myself cheerful and contented in so strange a banishment. One cannot without experience of calamity and reverse of fortune, estimate the compensating resources with which the beneficence of Providence has forearmed our uncertain condition. To myself, the kindness and sympathy of friends, the return of hope, the

sense of renovated health, the contemplation of beautiful scenery, when to pass idle hours has been a condition of recovery, have been sources of solace and delight, to which I required but to add a new and interesting professional study like the present, to rob this exile of much bitterness.

Mühlbad, Boppard-on-the-Rhine,
May 1, 1845.

THE

COLD-WATER CURE.

ITS USE AND MISUSE.

The cold-water cure is a highly artificial course of treatment, which experience has shown to be capable of removing several diseases that were before intractable, and generally, to make a capital restorative for impaired health.

The cold-water cure is a sort of training, of which, when conducted with caution and judgment, many more can avail themselves than one would have anticipated. When overdone, it has occasionally led to serious, nay fatal consequences. But there is so much good in it as a whole, that for the most part its misuse even, when not extravagant, leaves the patient with a surplus of benefit.

The cold-water cure can hardly be said to contain any new curative element; almost all its means had been tried and approved before, but they had not been combined to form a system.

The cold-water cure cannot do what medicine can; neither can medicine do what the cold-water cure can. The latter, viewed rationally, does not come in to supersede the former, but to help it out where it was at fault.

There is nothing in the cold-water cure at variance with the use of medicine, or to prevent the two being employed in conjunction, where neither alone would meet

all the exigencies of a case. Then to consider in the most general way, what medicine can, and what medicine cannot do, the better to fix the place and determine the therapeutic importance of the cold-water cure.

Acute inflammations of important organs constitute the strongest ground a physician can take, by which to exemplify the utility of his art. In this class of diseases the timely use of blood-letting, calomel, tartar emetic, saves many lives, by arresting disorganizing processes, which left to their natural course would prove fatal.

Another remarkable field in medical practice is that of spasm, pain, irritation, and nervous excitement; that is to say, the large variety of cases, over which opium, as the most efficient representative of its class, dominates.

A third field comprises different forms of morbid diathesis, whether congenital, or from subsequent vitiation of the body, in correcting which certain drugs possess a specific influence, as mercury and iodine in siphilis, colchicum in gout.

The three classes of remedial agents, which have been thus specified, like every other good thing, are liable to be misused; and much harm may thence arise, and has often thence arisen. But a practitioner, nevertheless, who should try to combat disease without them, would resemble a boxer, who should enter the prize ring with his right arm tied behind him.

When tonic remedies are required, drugs are less efficient; but, on the other hand, they are for the most part innocuous.

Where alterative means are necessary, the course resorted to in English practice, however serviceable in the main, is not equally unexceptionable. To get rid of general and local plethora, to rouse torpid actions, to move secretion, to evacuate, purgative drugs are the means generally employed. But they are liable to fail, and their continued use is not without bad consequences.

The instances last adverted to belong to the domain of hydropathy. If a tonic, reductive, or alterative course is needed, the means which hydropathy brings to hand are far more efficient and safe than the corresponding courses of medicine.

Then the place to be assigned to hydropathy in the

treatment of disease, nearly coincides with the use of mineral springs to drink of or bathe in. The cold-water cure comprises the same valuable accessories, which the practice of visiting mineral springs holds out, but it embodies them in a much more perfect and efficient form. It is not, however, pretended, at least by me, that the cold-water cure can be brought to supersede the use of mineral waters. On the contrary, I know that the latter are occasionally of service, where hydropathy has failed. The two, justly viewed, are distinct resources, each available, as circumstances require, in aid of medicine. But the compass and reach of hydropathy are wider and more extensive (especially when its sedative agency, hitherto not adverted to, is taken into account) than those which can be claimed for mineral baths or waters; the former method of treatment is, besides, less empirical than the latter; its objects are more intelligible; what it does has a more obvious and direct tendency to correct disordered actions, and to remove disease.

The means of the cold-water cure are referable to two heads, the accessory and the special.

First, of the accessory means.

"Cœlum et animum mutare," to remove to a salubrious spot in a fine country, leaving behind one the worry and toil of occupation, to rise early and breathe a pure air, to pass many hours out of doors, to take such exercise as one's ailments permit, to live on plain and simple food, to drink the purest spring water, to retire to rest early,—these are conditions, which it is only necessary to enumerate to create a presumption in favour of a system of which they form the basis. For their usefulness in promoting and restoring health is without question. Only invalids in general were practically unable to avail themselves of them, for they knew not where to find them united, before hydropathic establishments were invented. To combine removal from home, from the engagements of an active, or the temptations of an idle life, with the presence of cheerful society, under circumstances where everything favourable to health is put in one's way, every temptation to imprudence in

living removed, and attention to the rules conducive to recovery are rendered easier by the force of example, to provide satisfactory occupation and amusement in the place of a course of sanatory discipline, form the important desideratum to invalids, first supplied in hydropathic practice.

But to look a little closer into these preparatory conditions for the restoration of health, and how they are realized.

The situation of an hydropathic establishment should combine the following, to give it every advantage:— distance from the patient's home, retirement, a fine climate, a dry atmosphere, fine scenery, the proximity of mountains.

The arrangements should be such, that the hour for the principal meal should fall early in the day, when digestion is most vigorous. By this means the general adoption of early hours is secured; as the breakfast and supper hours to match with a one o'clock dinner must be early. At the same time, the day, thus divided, is shortened, and opportunity made for afternoon bathing. The dinner should consist of meat and vegetables, plainly dressed, the breakfast and supper of bread and butter, (with eggs or boiled fruits to the latter,) and milk for those whom it agrees with; otherwise, in place of milk, cocoa or black tea, for it is preposterous in the idea of curing a patient to make him eat or drink what he cannot digest.

The patients should have the means of meeting at breakfast in a common room, and of spending the evening together; and these simple provisions should be made to aid in preventing time hanging heavy. To which object the recurrence of baths at stated hours of the day, with the period of necessary exercise afterwards, further contributes.

Then it is evident, that there are many invalids, who would be restored to health by the accessories of hydropathy alone, or by following the cold-water cure, with the omission of the cold water. And a doubt unavoidably arises, whether all the good obtained may not really flow from the adventitious parts of the system, bathing and drinking cold water either going for nothing, or, even as far as they go, being detrimental. Let us

examine then these questionable, though essential, elements of an hydropathic course.

Most persons, who have enjoyed health, have at one time or another taken cold baths, or have bathed in the sea or in a river, and have experienced therefrom general invigoration, with an improved appetite and improved digestion. How have these effects been produced? How does cold bathing act thus salutarily? The virtue cannot be in the water, which must be but the means of abstracting heat. The good must flow directly from the abstraction of heat. Upon this subject the notions of philosophers have assumed more definiteness and precision since the publication of the views of Liebig.

The lamp of life is no longer a metaphor. The flame of our existence really burns. The heat we give out is the heat of combustion. The oxygen of the atmosphere, which we consume, is continually consuming us; but, under ordinary circumstances, consuming us for our advantage. For the power manifested in the play of our functions results from the decomposition of our organs, new materials being constantly provided in our food to supply the waste attending that decomposition. Then the heat given out by us is the measure of the activity of the vital processes going on within us. But what abstracts heat under circumstances of health only causes more to be generated. More heat, again, as it has been said, is only generated in the condition of more rapid inward change;—so cooling our bodies, that is to say, abstracting heat from them, when properly conducted, is like increasing its draught to a common fire. The flame in either case burns the brighter; and the energy and force of the engine it works is proportionately increased, not to mention, (to pursue the metaphor in reference to disease,) that stray elements, bad materials, products of disease, comparable to odds and ends of things mixed with fuel in a grate, may be consumed and disappear in the livelier flame.

Now this is not only entertaining, but satisfactory as far as it goes; and admits very well of being popularly and loosely brought forward in favour of cold bathing. But unluckily it is as much or more in favour of our living in Nova Zembla, as of our resorting to Graefenberg. It does not really explain the efficacy of hydropathy. We

knew before, that cold was bracing and cold bathing a restorative process: but such are their effects only when they are resorted to within certain bounds and limits,—a part of the problem, which chemical theory is not yet enough advanced to define and measure. For a knowledge of these conditions and limits we must fall back upon every day physiological experience, upon the effects found to be produced by exposure to cold under varying circumstances, upon the manner in which the living organization responds to the abstraction of heat.

Certainly, cooling the body is not at all times necessarily wholesome:

"Nudus ara, sere nudus,—habebis frigora, febrim."

A passenger, sitting benumbed on the outside of a stage-coach, is by no means the better for the loss of heat he is sustaining. With the chill he is depressed in spirits, his circulation is lowered, and he feels as if he had lost half his bodily strength. If the exposure to cold is long continued, he catches cold; in other words, after the lapse of a few hours, he is taken with feverishness, and is the subject of some local inflammation.

So the mere abstraction of bodily heat, and that to no very great amount or for a very long period, instead of being necessarily beneficial to a person in health, may at the moment be injurious to him in one way, and afterwards in a second. At the time he experiences an unpleasant depression of his system, which is followed by inflammatory reaction. Let us consider how these consequences might have been averted in the case supposed. If the passenger, instead of continuing his drive in the cold, had got down and walked briskly, his circulation would have become brisker, a glow of warmth would have supervened, the temporary depression would have vanished, and no secondary ill consequence would have manifested itself. Yet it is obvious, that in this variation of the experiment the quantity of heat abstracted from his body would actually have been much greater than he would have parted with, had he remained an hour or two longer shivering on the top of the coach.

Thus we arrive at the conclusion, that the condition necessary to render an unusual abstraction of the bodily heat safe, is so to excite the nervous and circulatory sys-

tems by exercise, that an increased supply of heat shall be simultaneously provided.

This condition is habitually attended to in what is popularly and rightly considered a prudent and wholesome use of cold bathing. The bather moves himself briskly in the water, in drying himself rubs himself well, and then walks at a smart pace. He takes pains to stimulate the nervous and circulatory systems, and an increased evolution of heat is the consequence; and instead of remaining chilled, he experiences a pleasant glow.

Then if he has avoided the things known to be prejudicial in bathing, if before plunging into the water he was not chilled or exhausted, if he had not recently taken food, (for bathing on a full stomach is never safe,) and if he did not remain too long in the water, he is likely, not only not to suffer by the experiment, and to find agreeable excitement from it at the moment, but to be solidly the better for it.

And it is as reasonable in theory, therefore, as it is found to be consistent with experience, that a person of good stamina, not passed the middle of life, and living otherwise prudently, may with advantage immerse himself in cold water for a brief period twice a day in ordinary weather, taking care afterwards by friction and exercise to ensure a brisk reaction; and that he may thereby improve his digestion and increase his strength. Strength, as a general rule, is obtained through the reaction which follows on the strain of a function; the brain, the muscular frame, every organ, is invigorated by exercise; strength follows upon the exhaustion of strength; power upon depression; the springs of health gain force by exertion, and loading them intermittently increases their resiliency. As bodily exercise in pugilistic training strengthens the muscles, so does cold bathing, systematically repeated, invigorate the circulation and the nerves.

Then I expect the reader to say, all this is very true, when applied to persons in health, and we knew it before; but are you seriously disposed to recommend a cold bath twice a day to invalids in general as a means of recovering health? You have specified two evils as liable to follow exposure to cold even in the healthy,—temporary

depression of the circulatory and nervous systems, and subsequent inflammatory reaction. Are there not many invalids, in whom the first alone of these consequences might ensue upon the use of the cold bath to a degree that would be fatal; and are there not others, who would as certainly suffer by the second? Are you prepared to show that there are resources in hydropathy for preventing those ill consequences of cold bathing, and which would enable a large body of invalids to commence a course of water-training with a reasonable prospect of deriving good from it?

Such questions might fairly be put by the most candid inquirer; by one, who might fully appreciate the availableness of a course of water-training to the moderately strong; and who, calculating what may be gained over the body through proceeding by gradual steps, might anticipate that a vast number of invalids might be brought to profit by the cold-water cure, if it could be reduced at starting to suit this enfeebled or excitable condition.

Then to consider the cases first, in which the doubt may turn upon the ability to bear the immediate effects of cold bathing;—whether, for example, the cold bath, instead of being followed by a genial glow and reaction to the surface, would not leave the patient for a long time blue and chilled, depressed and more exhausted, perhaps with the circulation on the lungs loaded and the heart embarrassed. It is certain that there are many and many cases, in which cold bathing, however guarded, would certainly be followed by these threatening results. I particularly remember the case of the Baron von B——, who died at Marienberg in September 1842. His narrative to myself, his fellow-patient, was, that he was suffering with a sort of neuralgic gout, and that he had had spasms at his heart. He seemed about sixty years of age; and I remember, when the weather had occasionally an autumn chill, how he complained of the loss of his flannels, and shrank at the approach of his servant with the prescribed tumblers of cold water; then he used the douche, and attributed to it the return of his spasms at the chest. His death was sudden in the night. Now I do not assert that the cold-water cure was not in this most serious case a remedy proper to be made trial of; still less that it was

not properly administered. But I look back to the case as a beacon.

However, without further instances, let it be assumed that such and such classes of patients with complaints capable at the least of considerable mitigation, cannot bear the ordinary effects of cold bathing. Is it possible to find for their use some modification of bathing, which may be safe?

Will warming the bath answer the purpose? Not the purpose of a cold bath certainly; a warm bath may sooth for the moment, but on coming out of it the patient feels chilled and no ways invigorated. Nevertheless, something may be gained in this way; water at 70° of Fahrenheit is cold enough for the first baths. But the use of this even as an ordinary bath might be perilous. What invention can serve this turn? How can the cold of a cold bath be reduced, unless the bath is made less cold?

The object can be obtained by diminishing not the degree but the quantity of cold; strictly speaking, by diminishing the quantity of water applied; and the chill thus reduced may be still further disarmed by combining friction with it. This is one of the cases to which rubbing with the wet sheet is appropriate. A sheet taken out of water at the temperature of 70°, and once lightly wrung, is thrown over the person of the patient, who is at the same time briskly rubbed with the hand over the wet sheet. It is obvious that the water is, as it were, diluted with the sheet: the patient's natural heat, excited by the friction, quickly warms the sheet; and the slight chill for a few seconds is followed by a glow of warmth. Friction with dry towels follows, and the operation is over. I have known this process prove at once soothing and restorative, where the action of the heart has been irritable from passive hypertrophy. In common cases water at a lower and lower temperature is daily substituted.

Another mode of arriving at the same object is the use of the sitz bath, accompanied with friction of the hips and lower part of the abdomen. It is a variation of the same idea. By means of the wet sheet less water is brought in contact with the surface of the body. In the sitz bath less of the surface of the body is brought in contact with the water. The skill lay in finding out what part of the frame could be made the subject of a partial

bath with most advantage. I remember a striking instance of the efficacy of this bath as a tonic, which made a strong impression on me, and gave me hopes of great eventual benefit to the case, which however ended unhappily. The Rev. Mr. G—— came to Marienberg in the autumn of 1842; he laboured under diabetes, of which his father and a sister had died; and he had been further and greatly reduced by diarrhœa brought on by the Ems waters. However, there were features in the case, which were in favour of a trial of hydropathy; it was not of long standing, and the quantity of urine passed had been so reduced by previous treatment under Dr. Williams in London, as not greatly to exceed the natural quantity. Then the patient began the treatment very moderately; and he assured me, that the effect of the first sitz bath which he took was to remove completely a sense of weight and uneasiness of the loins, which he had constantly experienced for weeks before, so that he felt lightened of a load, and could and did forthwith take a considerable walk, and returned refreshed by it; and the improvement lasted three or four weeks, and was positive. Unluckily more was aimed at, and a crisis took place, and all the good gained at first was lost.

Let me next suppose the case, in which there is nothing to apprehend from the depressive influence of cold bathing, but where an evil of another kind, inflammatory reaction, may be anticipated. For example, if a person with a habit full of gout, were to begin cold bathing without preparation, and daily to take a plunge-bath, in all probability he would be attacked with a fit of gout of unusual severity. How might this be prevented, and the patient securely avail himself of the strengthening agency of cold bathing?

The ill apprehended may be thus averted. The patient before using the cold bath is submitted to a process, which is essentially reductive or depletory. He is made to sweat profusely by means involving little excitement of the circulation. With this object he is packed in a blanket, and well covered up with clothes, and made to perspire by the accumulation of his own heat. Then, in a full heat and sweating profusely, he takes the cold bath; the immediate effect of which so taken is singularly

agreeable and refreshing, at the same time that the chance of inflammatory reaction following it, if not entirely removed, is nearly so. I remember two instances in point. Two patients had suffered several years with articular rheumatism, and were of irritable inflammatory habits: in one, there was rheumatism of the feet; in the other, of the knees besides, and other joints. Now these patients were taking the cold bath every morning, guarded by an antecedent hour or two of sweating, when they were ordered cold baths in the afternoon, in addition. In both of these cases there followed inflammatory swelling of the feet; in the second of the knees too, which again ceased to recur wholly in the first, and in a less degree in the second, when the unprotected baths were discontinued.

By such means, and they have important variations, which will be afterwards noticed, by using such precautions, it will I trust appear likely to the reader that a vast variety of patients might safely commence a course of water-training, which, if tried more roughly at first, would be productive only of unqualified harm.

Let me next go into some detail respecting the special machinery of the cold-water cure, and mention the general rules to be attended to in its employment. Then there are to be considered, the different kinds of baths, the use of the wet sheet and of wet bandages, the different means of producing sweating, the subjects of friction, clothing, exercise, water-drinking.

The temperature proper for the cold bath may be said to range between 45° and 55° of Fahrenheit. For weaklier persons the higher extreme is the most suitable; for the strong, the opposite. Length of immersion in moderately cold water is not an equivalent for pungent cold, which has a stimulant quality, directly exciting the nerves, and favouring vigorous reaction of the circulation.

Baths may be either general or partial. General baths again may consist either in simple immersion of the whole body in water or in an equivalent; or in subjecting the body to a shower, or to an unbroken fall of water.

The full bath is a reservoir of water, which should be deep enough to cover the shoulders of the patient, and roomy enough to allow him free motion of the limbs and change of posture.

Of course the larger the bath the better; but invalids

are not to plunge in, even if the size and depth allow this. To many the shock of plunging into a bath is not safe. The invalid should simply step in, quickly of course, and then submerge his head, but that, too, gently. I have met with one case, in which the patient, who was under forty years of age, and had no evident tendency to fulness of the vessels of the head, yet experienced bleeding from the nose, when he plunged into the bath, which did not recur if he stepped in. In another it made the difference of a bilious headache in the forenoon, whether he gently sank his head under the water once, when in the bath, or repeatedly and hurriedly did so.

It is a customary practice to wet the face and chest before stepping into a bath.

The time for remaining in the full bath is from half a minute to two minutes. And it is a good plan to divide the longer time into two immersions, coming out and being rubbed for half a minute to a minute, and then re-entering the bath. There are various circumstances under which a longer immersion is advisable. The full bath is much more agreeable than its equivalents, and may be considered essential in some cases; as for instance, in cases of gout and palsy, where the patient, also, not able to support himself, is yet able to stand and walk in the full bath, supported by the water.

The best equivalent for the full bath is an oval tub, in which the patient can sit down with his legs stretched out. Then water is poured over him, either from buckets or from a watering-pot. If the latter is used, it may be either with or without the rose. With the rose, the water falls in a shower, and is more stimulating to the nerves. Two watering-pots full, or an additional bucket, if necessary, are a sufficient dose.

Another plan is, sitting or standing in a tub, to have the person drenched by means of two or three towels taken dripping out of water, and laid on the shoulders and hips.

Water in a shower is supplied either by the common shower-bath, or by the staub-bad, as it is termed. In the former, the shower falls upon the head; in the latter, innumerable small jets of water are made to spirt out against the whole person. Both these baths are useful in nervous cases. The fall of water on the head, how-

ever, from the common shower-bath, is sometimes too stimulating; and those who use this bath at home for its convenience, often find it advisable to protect the head with a conical leather cap.

Water in an unbroken stream is applied in two forms, either by the douche, or the wave bath.

The douche is a fall of water of from ten to thirty feet, in a column of an inch to two inches in diameter.

The douche is not to be allowed to fall unbroken upon the head, which, when passed under it, is to be protected by the hands raised and joined to form a cone. Nor is the douche to fall on the chest; but principally on the shoulders, back, loins, and hips. These precautions are necessary, on account of the powerfully stimulating action of the douche.

The effect in persons of the soundest cerebral circulation of this water-stick being allowed to break upon the head, resembles the exhilaration produced by wine, and is occasionally attended with giddiness. The douche taken upon the chest disturbs the heart's action, and renders it unequal and irregular, causing faintness. I have known the douche produce, at the time when taken, hemorrhoidal bleeding in a patient, who was free from this symptom at other times, and when using other baths.

In nervous cases the douche is at first commonly too exciting. When a patient can bear it, this bath is wonderfully invigorating, and it is the pleasantest of any; for, after the first four or five seconds, no chill is felt, the friction of the water on the skin, and the blow and succession of the deeper parts stimulating the muscles and nerves, and giving force to the circulation. The douche may be taken from two to five minutes.

The wave bath is a broad fall of water, of no great height, from two to four feet; it is very agreeable, and resembles bathing at a river weir. It must be supposed to have no further effect than splashing about in the full bath.

Partial baths may be multiplied ad infinitum. Those alone deserving separate notice, are the half bath, the head bath, the sitting bath, and the foot bath.

The half bath is a large oval tub, in which the patient

sits, with his legs extended, in a depth of six to twelve inches of water. The bath is nothing without the adjunct of continued friction; then it is extremely efficient, either as a direct stimulant to the lower half of the body, or as a revulsive or derivative agent. The patient may be kept in the bath from a quarter to half an hour, or more, according to the effect required.

The head bath is a shallow basin, so placed that the patient may lie with the back of his head immersed in water. An equal effect may be obtained by the application of wet cloths to the head. Then it must be admitted that occasions are not wanting in which it is desirable so to cool the head. But these for the most part arise in acute head attacks, congestive or inflammatory. Here the cold is used sedatively, and has to be applied for a considerable length of time, and cold greater than that of water is often preferable; so the head bath hardly forms part of the apparatus of the cold-water cure for chronic disorders. Disorders of the latter class, when they affect the head, are commonly best relieved, if cold water will relieve them at all, by its application any or everywhere else. The head again is never used as other parts are, to act derivatively upon.

If the head bath is a comparatively useless contrivance, the sitting bath makes ample amends. The sitting bath and the wet sheet are the cleverest and most original ideas in the cold-water cure. Who would have thought of sitting in a tub of cold water to cure a headache? or of being wrapped in a wet sheet for rheumatism?

The sitz bath is a tub large enough to sit in, sloped, with a high back, and the front low enough for the thighs to rest against it at a convenient angle. The water in it covers the hips. The bath may be taken for from five minutes to half an hour. The small quantity of water it contains soon loses its chill; and it becomes necessary either to renew it, or to employ a flowing sitting bath, in which the water is continually changing. Friction of the hips and abdomen is necessary with many when using this bath, to animate the reaction.

The value of warm sitz baths, under the name of hip baths, has been immemorially known to physicians and surgeons, and their power of soothing uterine and vesical irritation. But the cold sitting bath is a much

more effective instrument. As a general tonic, a form of cold bath to be taken once, twice, or even oftener in the day, for a few minutes preparatory to exercise; it is a most convenient and indispensable element in a course of cold-water training. Then in hemorrhoidal complaints, and in various kinds of uterine disorder, it is of not less utility. Then derivatively, to relieve the head, its operation is surprising: many a headache, which nothing else had moved, has given way at the first trial of the sitz bath. Nervous headaches, the headache of indigestion, headache from cerebral congestion, such admit of relief by this means, though not in every case. Nor less are the stomach and digestion benefited by its use, and the action of the bowels assisted. Nor are its general revulsive effect, and power of equalising the circulation, less remarkable; so that a sitz bath is the best remedy for cold feet.

One would have expected this bath to drive blood to the head; and I have known two persons who occasionally experienced giddiness on taking it. They were both patients with gout. In such cases one would not press the remedy; or one would recommend its trial in conjunction with wet compresses to the head. Its general effect upon the head I will exemplify by an extract from a letter, written to me by a patient, who followed the water cure last winter under my advice:—"I find," says the writer, "while in the sitz bath my feet become warm, and my head relieved; so much that at no time of the day could I have studied or attended to business so well, provided always that it was on an empty stomach; if soon after breakfast or dinner, it had quite the opposite effect. But for the trouble of dressing and undressing, I should think it an irresistible luxury —a cold sitz bath."

The foot bath, that is to say, immersing the feet in a depth of three or four inches of cold water, has something of the force of the sitz bath, but in a much less degree. For cold feet at night, a foot bath for five minutes, with smart rubbing at the time and afterwards, the feet then, if necessary, wrapt in flannel, is a capital corrective. In rheumatism of the head, I have known the same remedy used with considerable advantage the last thing at night, the head being afterwards wrapped warmly.

OF THE COLD SHEET AND WET BANDAGES.

The wet sheet is employed in two ways. It is either thrown over the person, which is then vigorously rubbed in it; this is friction in the wet sheet: or the patient is wrapped in the wet sheet within the blanket; this is packing in the wet sheet. The first of the two operations has alone to be considered at present

Then the cold sheet may be used either dripping or wrung, wet or damp, the former being only a stronger dose of cold. Again, where there is reason for it, the water employed in this discipline may be tepid; so applied, it will still produce a momentary chill.

So rubbing in the wet sheet may be considered the mildest form of cold bathing. It is likewise eminently soothing. Irritability of the heart, irritability of the nerves, are wonderfully relieved through its influence. How comparatively little stimulating it is, I remember an example of in the person of Mr. H——, whose acquaintance I made at Marienberg in the summer of 1842. He came to Marienberg for change of air, and to do nothing; for he had been a great sufferer from gout, and had derived important benefit from the cold-water cure under Priesnitz, at Graefenberg; but he had now pursued the treatment nearly three years, and even by Priesnitz's admission had done too much. So that now his habit had become so irritable, that being packed in the blanket, or any of the common forms of cold bathing, brought on in twenty hours some demonstration of gout. But he took friction in the cold sheet twice a day with refreshment and advantage.

Wet bandages have a great but questionable reputation in hydropathy: they may be employed in two ways, either as simply refrigerant, when of course they require frequent renewal: in this way they have always been used beneficially in appropriate cases of medicine and surgery; but even these applications, colder than spring water, are commonly more beneficial.

Or, as alternately refrigerant and heating. It is in the latter way that they form a feature in hydropathy. They are then changed four or five times a day only, are applied very wet, and with some exterior covering, including oiled silk, if necessary, to prevent evaporation,

and cause an accumulation of heat. Then in fact they act like poultices, and like poultices are said to draw; they heat the skin, which exhibits a red efflorescence, or crop of pimples or pustules. The epidermis often comes off in scales or powder in these compresses, and when obtained from the water, in which they are afterwards wrung, is often represented as the "materies morbi," which has sweated out.

In some cases of indigestion, I have thought the abdominal wet bandage useful, and consider it always worthy of trial in this, and all other chronic derangements of the abdominal viscera.

A wet bandage round the chest is occasionally efficacious in tranquillizing irritable action of the heart; and contrary to what one would have anticipated, is a most useful part of dress to young people of delicate constitution; the bandage, a short under shirt, is applied wrung, damp only; and the dress renders it quickly warm.

OF HYDROPATHIC SWEATING.

With such an elaborate system of artificial cooling, it was natural to combine expedients for artificially heating the body. And there was the suggestive analogy at hand of the Russian vapour baths, which are followed by the application of cold water or snow. But it was long before Priesnitz introduced this element into his system; and after using it with some marked benefit for several years, he has of late nearly abandoned it. The explanation of this change in his practice is probably this; that the indiscriminate use of sweating with invalids is occasionally productive of ruinous consequences; and that no tact, however naturally great, can enable a practitioner, without elementary pathological knowledge, to treat disease with discrimination, or to realize the lessons of his own experience.

It has been already in part, and will be afterwards more fully shown, how happily the two processes of artificial heating and cold bathing may be made to co-operate and to assist each other. Many, with whom cold baths taken without preparation would produce an accession of inflammation, may safely and beneficially take them after sweating. Many who, labouring under

gout or rheumatism, were used to derive immediate benefit from artificial sweating, but purchased it dearly by its bringing their complaint into an atonic and more troublesome form—the result of the debilitating effects of sweating alone—find themselves able, by combining sweating with the cold bath, to avail themselves of the reductive effects of the former without the drawback adverted to. In other cases, in which the constitutional power is too low to bear unmitigated cold bathing, artificial heating, short of sweating, is found to be a most serviceable additional means to those already specified for raising the patient to a state, through which proper re-action after the cold bath may be ensured. There are three varieties of hydropathic sweating or heating,—packing in the blanket, packing in the wet sheet, sweating by heated air.

Of these, packing in the blanket is perhaps the most important. It is hardly necessary to describe the process, which, however, is this:—The patient having stripped, lies down on a large and thick blanket, laid over a mattress. The blanket should reach as high as his ears, and half a yard beyond his feet; and it should be broad enough to allow each side to be brought in its turn round the body, and tucked in beneath. In doing this, the two upper corners are drawn each in a thick fold round the throat, and the ends pushed in between the neck and shoulders. The lower part of the blanket is folded back under the heels. Some force is necessary to draw the blanket firmly round, so as to pack the body closely in it, leaving little space for air, and preventing the packing loosening. Over the blanket a down bed is laid, covering the person from the throat to the feet; over that again another blanket, which is closely tucked in on each side; and finally a thick towel, or folded piece of flannel, is brought over the head and ears, and its ends secured at the neck. This last part of the process is to be dispensed with, when it happens that there is a disposition to headache or cerebral congestion; and occasionally on the same grounds a wet cloth is to be laid over the forehead, while the rest of the person is undergoing the heating process.

In general, the contact of the blanket with the skin after the first few trials, is not particularly disagreeable.

Those to whom it proves so, may be packed in a dry cotton sheet within the blanket.

The temperature of the room had better be about 65° of Fahrenheit. If it is colder, the heating process goes on inconveniently slowly; while with many it is important, on account of the head or the lungs, not to have the room at a higher temperature. During summer a window of the room should be left open, that the patient may breathe the fresh air.

It is supposed in the above remarks that the operation is to be continued long enough to produce sweating. If the patient is merely to be heated, fewer precautions are necessary.

The best time for being packed in the blanket is the early morning. This arrangement leaves the day free, and at the same time ensures the patient being ready for his bed early at night. Or if his nights are disturbed, it is an agreeable and refreshing change to be transferred from a hot and tumbled bed to the cool air and the chill of the first packing; for it is surprising how far this process is from quickly heating one.

However, that the patient may sweat well, it is desirable that he should remain awake. Then he is sensible of the gradual accumulation of heat, of which when it threatens to become oppressive, he feels relieved by the commencing perspiration. Then the heat increases again, and in time he arrives at a maximum at once of heat and sweating, the pulse being at the same time something accelerated. This is the period in the ordinary course of water-training to take the bath. The maximum of heat and sweating is not maintained very long; after a quarter to half an hour the pulse falls again, the sensation of heat diminishes, and a relaxed and passive perspiration succeeds to the active and vigorous sweating there had been before. The patient learns by a few trials when he has reached this maximum, the duration of which is of course different under different circumstances.

If the patient fall asleep, when packed in the blanket, one of two untoward events commonly ensues; either he does not get heated, or on waking finds he has his time still to go through; or he falls quickly into an atonic relaxing sweat without adequate heat.

The aptitude of different persons to perspire, when

packed, and of the same persons at different times, varies greatly. Generally, in the routine of water-training, it is better that those who perspire in the blanket with great difficulty, should not be forced to perspire at all. But it does not, on the contrary, follow, that those who perspire easily, should be made to perspire a great deal. Some perspire readily from weakness, and I have seen hydropathic perspirations which were evidently colliquative.

Those who naturally have the skin dry, and perspire difficultly with exercise, prove generally the best subjects for the cold-water cure. Many, to whom it is desirable to sweat, cannot perspire in the blanket unless they heat themselves by muscular exertion in it; which may, however, be managed without deranging the coverings.

OF PACKING IN THE WET SHEET.

This operation differs from the preceding only in so far as the patient is first wrapped in a wet sheet, over which the blanket and exterior coverings are applied in the manner above described. The wet sheet may either invest the whole person to the neck, or descend no lower than the knees. Some find a difficulty in getting the legs and feet warm when packed in the cold sheet; others in knowing when they perspire, which difficulties are obviated by the last provision.

Packing in the wet sheet is used for two purposes; either as part of the course of water-training in chronic indisposition, or as a febrifuge: another opportunity will be taken of considering its application with the latter object.

With the first object, packing in the wet sheet is commonly employed in cases where heating simply, and not sweating, is contemplated. The patient lies so wrapped up for an hour to an hour and a half, that is to say, till he is thoroughly heated, but only thinking of perspiring; and then takes his bath.

This is a less disagreeable process than might be anticipated. The first chill is of course unpleasant, but use and the consciousness of improving health reconcile one to it, not to mention that the body really becomes warm almost immediately. With some even the reaction upon packing in the wet sheet is so prompt and lively, that

they sweat more readily when thus packed, than when packed in the blanket alone. To many, packing in the damp sheet is particularly soothing. A patient who was a short time with me with a languid circulation and a large, thin, irritable heart, derived comfort and benefit from being packed for an hour twice a day in one wet sheet, and on coming out being rubbed with another.

Packing in the wet sheet is a more tonic operation than packing in the blanket. The patient is not generally intended to sweat in it; and the chill attending it is of course a little preparatory cold bath to the rest of the day's discipline. The theoretical object of the routine water treatment, with the intention of strengthening, is to submit the patient as often as possible in the day to the alternation of chilling and reaction. To find the limit where the patient should stop is the problem for the physician. The patient will do well to remember, where there is a doubt, that he will lose less by doing too little than by doing too much.

OF SWEATING BY HEATED AIR.

There are occasions in which it is advantageous to adopt this means in the cold-water cure. There are different modes of carrying it out. These consist, either in packing the patient in a blanket in a room heated to 70° or 75° of Fahrenheit, or employing the common hot air bath; or, having wrapped the patient in a blanket, letting him sit in a chair, over which and his person another blanket is so disposed as to surround and inclose the space beneath the chair; and there a spirit lamp is set to burn.

There are cases, which will be noticed, in which sweating is required to be carried to a great extent, and to be repeated in the day. In such it is desirable thus to shorten the sweating process.

OF FRICTION.

It has been already explained how essential an adjunct of cold bathing friction is. And it has been seen that friction may be used either conjointly with the bath or following it, as a means of accelerating the return of

vigorous circulation to the skin. But one or two remarks may be added on this head.

The skin is the organ upon which the hydropathic agents immediately tell; it is therefore desirable to keep it in good humour, or in the best possible state for encountering their action. Now if the skin fall into a high state of irritation, neither sweating nor bathing can be long continued. The course of water-training must be interrupted. This is a point liable to be overlooked by those who view all action upon the skin produced by the cold-water cure as critical and salutary, an error, which will be afterwards examined. The contrary view I believe to be the right one;—that the skin had better be spared as much as possible, and kept as pure and free from heat as can be managed during the cold-water cure.

Accordingly, friction is to be used in the way least calculated to produce inflammation of its surface. So, for instance, the limbs should be rubbed not up and down, but one way only, from the body towards the extremity.

Then the friction used should not be quick; but slow, deliberate, and with considerable pressure, so as to operate not on the skin alone, but likewise on the flesh, bringing the latter into play in restoring the vigour of the circulation, and obtaining the same general end with so much less mechanical irritation of the skin itself.

OF CLOTHING.

After having considered the bath, the packing which may precede, and the friction which is to accompany or follow it, we may appropriately inquire how is our patient to be clad? The general effect of hydropathic training is to harden the frame, to render it less susceptible of cold, to enable an invalid to dispense at all events with an invalid's clothing. But the patient is commonly told to lay aside at once his flannel, even if he have worn it from a child. Now this is very absurd and inconsequent. It is true, indeed, that the hydropathic treatment is so stimulating, so really warming, being usually commenced in summer, that in most cases no evil results from this sudden and violent change. But I have seen harm come of it. There are frequent cases, to which hydropathy is applicable, in which it is most desirable between whiles

to foster and keep up the heat of the body, if it were only that there might certainly be vital energy enough maintained to meet the demands made upon it through the baths. No doubt there is a medium. As too warm clothing, to one unaccustomed to it, is sensibly exhausting and oppressive; so to those who habitually use it, does it prove relaxing, the skin losing tone and the body vigour, partly through the constant drain of insensible perspiration, partly through insufficient heat being abstracted. And so for the young and middle aged, and even for those something advanced in years but of full strength, it may be good to dispense entirely with flannel next the skin. But this does not apply to all seasons and weathers and states of indisposition. Flannel is necessary, if without it the patient feels sensibly chilled. Anything is better than allowing the body to be the subject of a continual chilling process, of a constant passive abstraction of heat beyond what one's sensations declare to be agreeable and wholesome. This is a very different thing from the large and sudden abstraction of heat by bathing. In the practice of the latter, the body is healthfully vibrating from heat to cold, and from cold to heat, and by the extent and frequency of these vibrations may be measured the efficiency of a sanatory process. But constantly to steal away necessary warmth, and as it were slowly to cool down the warm springs of life, is directly to impair their vital elasticity, and at variance with the very principles in which good is to be expected in the cold-water cure.

OF EXERCISE.

Exercise constitutes one of the most important elements of a course of water-training. Its use, however, requires much consideration.

It is obvious that exercise and cold bathing have a natural alliance and go well together. The benefit derived from cold bathing is obtained through the glow and reaction which follow, and these are directly heightened by exercise.

Then positive good is often attributable to exercise by itself and apart. It is almost puerile to instance this. However the following cases struck me.

A gentleman became a patient at Mühlbad in July

1843: he had served in India, was not however of impaired constitution, nor was he of a full habit, but he had had threatenings of gout: his principal complaint, however, was fixed uneasiness, hardly amounting to pain, in the forehead. He had passed the preceding three weeks at Wiesbaden, where he had taken the waters, and been briskly purged, but with no relief to his head. He was packed in the blanket the morning after his arrival at Mühlbad, and then took the full bath; these operations made no sensible difference with him. At eleven the same day he took a sitz bath, which to his surprise and satisfaction entirely removed the pain in the head for that day. Pursuing this plan, however, with the addition of a second sitz bath a day, the headache gradually worked its way back, and in ten days he thought it was as bad as ever. It varied, however, one day with another, and I encouraged him to persevere. At length, one day on his return from a mountain walk, longer and more fatiguing than usual, in which he had perspired profusely, he told me he thought the headache had really given way; he felt greatly better, and this time the amendment continued. And after some weeks stay, he left Mühlbad with very little, if any, sense of inconvenience in the head at any time.

A gentleman labouring under hypochondriasis, and undergoing with advantage the most vigorous tonic treatment, but who could not bear either packing process, it so lowered him, found himself, nevertheless, never so well as when in full perspiration from exercise. And so with another, labouring under some obscure affection of the spinal marrow, with threatening paraplegia and attacks of tic.

The effects of exercise, combined with nutritious diet and strong malt liquor, in developing muscular strength, are shown in pugilistic training. Exercise is then pushed to fatigue, and to-morrow's strength grows out of to-day's exhaustion. This rule, however, is only for the healthy. It is not a safe one for those who have a weak point in their vital economy. Exhaustion, the enervation which attends it, has more to do with the production of disease than is commonly imagined; and if in an infirm body the strength is strained to that point, morbid reaction, general or local, is prone to follow.

I am disposed to illustrate this point by detailing at some length a very interesting case, in which the cold-water cure failed entirely, and, as I think, through the principle last stated being overlooked. The rest of the treatment, extremely moderate and judicious, would certainly have benefited the patient, if the blind and routine recommendation of exercise had not been superadded. The case was treated by a very celebrated pure hydropathist, and exemplifies well the misuse of the method by a practised and skilful hand, through ignorance of first principles, both as to the habitudes of disease and the resources of medicine.

Mr. F., a surgeon, aged forty, at fourteen had rheumatic fever, which confined him to his bed for two months. He had previously been short in stature; he now shot up in height, (he is six feet two,) and enjoyed excellent health. At eighteen he contracted urethritis, and in ten days was attacked with violent rheumatic fever and rheumatic swellings of all the joints: the fever preserved an inflammatory character for three or four weeks, and he was subsequently for six months unable to quit his bed. Between this illness and the age of thirty, he had urethritis seven times, each of which was followed by several months of inflammatory rheumatism, which principally affected the hands and feet. But the last attack was the worst, and so severe in its consequences, that till three years ago he was confined to his chair by tenderness and weakness of the feet. In the attacks which have been referred to, nothing that he tried relieved the pain; bleeding only lessened the fever; colchicum, iodine, arsenic, antimony, were inert; towards the close of each attack, however, he took opium with advantage. In the two last attacks the right eye had been severely inflamed, there being deep redness of the conjunctiva, conjoined with internal inflammation and effusion of lymph upon the iris: the iritis yielded each time only on his becoming salivated.

One circumstance occurred during the last attack which it may be of use to mark. As he lay in bed weeks and months upon his back, the weight of the bed clothes bore down his toes and kept the ankle-joints extended; in which posture, when he was better and attempted to stand, he found his feet permanently fixed by contraction

of the muscles. To remedy the distortion of the feet he had thus incurred, Mr. F. six years ago had the tendo Achillis divided in each ankle. The operation, performed by Mr. Liston, was mechanically most successful. The feet were set free, and could be brought to a right angle with the legs. But long as was the interval since the last acute attack, it turned out that the operation was still premature. The patient's system was still full of rheumatism, and the pressure maintained to keep the liberated ankles in their proper positions brought on a smart attack of rheumatic fever, in which even the eye became again inflamed, and it was necessary to discontinue the bandages about the ankles. When the attack of rheumatism had subsided, the feet were found in the same position as before the operation.

And now an odd coincidence occurred. The patient was led to try homœopathy. He had accordingly taken three times a day for three days an infinitesimal dose of caustic potass, when he was seized with a general attack of rheumatism, affecting, however, principally and for the first time, the muscles of the chest. The event was most satisfactory to the homœopathic doctor, for it proved as salutary as if it had been brought about by the fine science of Boerhaave or Sydenham. The attack subsided in a few days, sweeping away in its retrogression all the previous long-continued symptoms. The right eye was no longer red; the pain abated in his feet, and the patient was able to begin to walk with high-heeled shoes. He very naturally continued to take the homœopathic medicines, but no further result for good or for harm manifested itself.

He had now been a year and a half capable of getting about, with sticks and high-heeled shoes, indeed, but wonderfully better compared with what his state had been the seven preceding years, when, unluckily as it happened, he thought of improving his condition by hydropathy.

On the 1st of March, 1843, he commenced the cold-water cure at ——— in England. He was wrapped in the wet sheet alternately with the blanket every morning at half-past four. He lay from two to three hours; he was then profusely sluiced with water by means of wet towels; he then dressed and took a walk, drank water,

and sat down when he could walk no more; then he eat his breakfast, and shortly afterwards walked again. He was required afterwards to walk frequently during the day as well and as long as he could. After a fortnight of this ill-judged discipline, his feet had become so painful that he could scarcely walk at all. Nevertheless he persisted, according to the instructions he daily received, in walking a little daily, his utmost, with the most determined faith and fortitude, in spite of the pain, for two months, his feet gradually swelling more and more, especially towards evening, and latterly his right knee becoming painful and swollen. Then the rheumatic diathesis was so thoroughly stirred up in his system that the right eye became again inflamed. This affection he submitted to have treated, so infatuated was he, for ten days, with local cold bathing twice a day, and cold compresses only. Then at last, the inflammation continuing, and the sight of the eye being nearly extinguished, he left the cold-water establishment, and took calomel, when the inflammation subsided; but the sight of the eye was permanently impaired, and he was hardly able to crawl about a room.

It is therefore necessary in the hydropathic treatment of the sick, to recollect that the natural tendency of exercise is to heat the blood, exhaust the nervous system, and strain the organs of locomotion; and that although in health and when not overdone, these results all turn in their consequences to increase of strength, yet that in disease they are more likely to take the course of simply aggravating it.

The regular time for exercise is after each bath. But exercise is sometimes required preparatory to bathing. A patient must not bathe when cold or chilled. If such is his condition, when the hour for bathing is at hand, he should walk to warm himself, but not so smartly as to accelerate his pulse and breathing.

It is dangerous, when violently heated by exercise, to bathe in cold water. It is indeed often done with impunity, but every now and then it is fatal. What makes the practice so often unattended with ill consequences, is that one is tempted to indulge in it only in the summer, when the air and water are warm.

It is, however, perhaps, equally imprudent to wait to

get completely cool after violent exercise, and then to bathe in cold water; the body is then at its minimum of power.

Then what had a person best do who comes in exhausted with violent exercise, and wants for any purpose to be recruited in the shortest space of time? He is either heated and flushed, or chilled and depressed, as it happens that the day has been passed under a hot sun or in cold and rain. In either case he should proceed in the same way. He should be packed in the blanket, and lie an hour so wrapped up, till, if previously heated, his circulation may have subsided without his body cooling, and if previously cold, his body may have acquired a redundant supply of heat; then let him have cold water poured over him, and be rubbed and dried.

OF WATER-DRINKING.

Drinking plentifully of pure spring water is another element of the cold-water cure of very great and general use. It serves many purposes. It supplies the waste occasioned by sweating, and promotes transpiration; it increases the quantity of urine, and so promotes elimination by that channel; it tends to remove costiveness; it is a cold bath to the stomach, and improves the appetite and digestion; finally, diluting the circulating fluid, and producing changes in its properties which experience has shown to be salutary, it may be said to wash the blood.

Then how much cold water is to be drunk, and when? From six to twelve tumblers, each the third of a pint, are the quantity necessary. Commonly these quantities are taken even at first without inconvenience, and after a few days even the largest becomes from habit positively agreeable. Much more can be taken by many, without any ill attending. I have known a patient swallow forty tumblers a day without being sensibly the worse for it, so accommodating and elastic is the human economy. Nor is this fact surprising when put side by side with another of the same kind. Some of the brewers' men and coalheavers in London are known to drink as much as three gallons of porter a day, without experiencing any immediate ill consequences. But this excess, either

in porter or in water, cannot fail to be ultimately prejudicial. An English lady, to remove indigestion, commenced water-drinking to a great extent without advice or any collateral hydropathic measure; it did not cure the indigestion, but covered her field of vision with black spots.

There are some in the opposite extreme, who cannot drink a tumbler of water on an empty stomach without being uneasy and oppressed through it. Such patients do wisely to relinquish this part of the treatment. For this reason, in the most satisfactory case which I have seen of gout cured by hydropathy, the patient with my sanction drank no water except at meals. It had always been his habit to drink very little of anything; and he found the two morning tumblers of water, with which he made his first experiment, lie heavy on his stomach and distress him. Those who cannot take exercise, again, had better drink proportionably less, and those labouring under affections of the bladder and kidneys, have especially to study how much and how little is best suited to them.

The time for drinking cold water (curatively) is not at meals. On that occasion the patient may consult his habits and inclination as to the quantity he drinks. Generally, the less fluid taken at meals the better. The proper times for drinking water, are in the morning before breakfast, and after each subsequent bath, when the stomach is unloaded, and when the bath has produced a feeling of inward heat and commonly of thirst, and when the chill upon the surface seems well balanced by an inward cold bath. A patient may begin with from two to four tumblers before breakfast; one, while he is sweating, and two or three while he is dressing and starting for his walk or during it. After his other baths he may drink one tumbler, and repeat it after a short interval; and again during the ensuing time of exercise, or on returning from it.

As I have mentioned that in one of the most remarkable cases, which I have cured by hydropathy, no water was drunk except at meals, I will conclude the present head and my remarks upon the machinery of the cold-water cure, by narrating another, in which the good

obtained resulted from the drinking of cold water, and from that only.

A gentleman, between fifty and sixty years of age, thin, spare, sallow, much reduced in strength, and having the look of one labouring under serious chronic disease, became an inmate of Marienberg in May 1843. His present illness only dated back to the autumn of 1842; but in the course of the preceding twenty years he had experienced three attacks of hæmaturia; in each the passage of blood with the urine had been preceded by sensations of pricking at the extremity of the urethra, and attended with general indisposition; then a fit of pain occurred in the course of the right ureter, which lasted about a quarter of an hour, and went away suddenly; at the same time the bladder became irritable, but no gravel or calculus was observed to pass. In the autumn of 1842, when in his usual health, in consequence as he imagined of eating a good deal of fruit, considerable irritability of the bladder supervened; the water became clouded with mucus, and at length tinged with blood: at last the urethra was occasionally obstructed with clots of blood, requiring the introduction of an instrument for their removal. Towards December he further experienced an inward soreness at the perinæum, when he sat, or on evacuating the bowels; this was increased by the motion of a carriage. He lost strength, and his health became much impaired. It should be observed that the general habits of this patient had been of the kind most conducive to health. He had for several years dined at two, and drank no wine, and occasionally travelling on the continent, had at other times lived at his country-house in England, interested in scientific pursuits, as well as in the resources of a country life.

In the winter of 1842-3, he consulted Sir B. Brodie and Dr. Prout. The former examined the bladder, and made out the existence of trifling enlargement of the prostate. After testing the urine, they told the patient that his symptoms were attributable to sympathetic disturbance of the bladder, proceeding from an affection of the kidney; and they prescribed for him a course of infusion of buchu leaves, to be continued for several months.

He arrived at Marienberg the beginning of June, something better, but all his symptoms remaining, the urine being clouded and high coloured, and depositing on standing a thick layer of opake mucus, the upper part of which was stained red. The prostate gland was half as large again as natural, and pressure on it produced a dull sense of pain. He was ordered to drink ten glasses of water daily, to take two sitz baths daily, first at 18° Reaumur, to be gradually reduced to that of spring water, and to use a lavement of a third of a pint of cold water every morning, which was retained. A few days made a very sensible difference in his appearance, and the urine became less high coloured, and freer from mucus. He was after a little recommended by his then adviser to take more exercise, and to begin sweating in the blanket, with cold affusion after it. Both these means disagreed with him: the sweating produced languor and debility, and was discontinued after the first trial; and the walking increased the vesical irritation.

He now, the beginning of July, left Marienberg, and came to Mühlbad, where he remained till September. Then, taking less exercise, the bladder became again more tranquil. After a month he likewise discontinued the use of the sitz baths, having always felt for a short time after their use some constriction of the neck of the bladder, and a greater effort necessary in passing urine. He thought himself better without the sitz baths. On making the trial of discontinuing the daily dose of water drank, he found himself, on the contrary, sensibly worse; the bladder was more irritable, and more mucus was passed. Then the permanent part of his treatment consisted in his drinking from ten to twelve tumblers of spring water daily. His progress was most satisfactory. The high colour of the urine went away, and afterwards the mucus disappeared entirely, and the uneasy sensations in the perinæum left him, and the bladder became much less irritable, so that he had to make water not oftener than every three hours during the day, something oftener at night. He reacquired a look of health, gained flesh and strength, and now took considerable exercise with advantage. He was still improving, when he returned to England in September 1843.

In March 1844, he thus wrote to me—"I am happy

to say I continue well, that is, as well as when I left you in September; I have steadily pursued the drinking part of the cold-water cure all the winter, and it seems obvious that it was that which did me good from the first, by allaying the irritation consequent on a too acrid secretion."

Having thus passed in review the means which the cold-water cure embraces, I proceed to show how they are to be employed in the treatment of disease.

Then there are four principal intentions, to which they may be made subservient. The cold-water cure may be rendered either tonic, or reductive, or alterative, or sedative.

1. The tonic course.

Of this sweating forms no part. Cold bathing, with friction and exercise, and cold water drank in moderation as a stomach bath, are its elements. From what has been already said, it may be anticipated that there may be considerable variety in the application of these means, even with the single object at present contemplated. To take examples almost at random, the following are different plans, which I have ordered with advantage to patients, of whom the weaker could at the time only bear the first, while others were only benefited by the last and most stimulating.

a. A sitz bath at eleven in the forenoon, for from five to ten minutes, to be repeated in the afternoon.

b. The douche in the fore and afternoon.

These and the like formulæ are for the class of patients who, however differing otherwise, agree in this, that they are not strong enough for any curative discipline, till they have as it were fully awakened their vital powers by being up and out, breathing the fresh air, and having begun to digest a nutritious breakfast. There was at Marienberg, in June, 1843, and afterwards with me at Mühlbad, a gentleman about forty years of age, of a large frame, strongly constituted originally, but who, through a life commenced very early of adventure and physical hardship and some excess, had become shattered in strength and highly nervous. Sinkings, with palpita-

tion of the heart, unaccountable feelings of depression and muscular weakness, his legs failing, the knees cold and perspiring, used to come over him from time to time. Then various trials of hydropathy, which were made, failed of doing him good. Some discipline at an early hour had formed a part of each. That error rectified, when I had this patient under my uninterrupted management at Mühlbad, he daily improved. The plan, which agreed with him, was this: he rose, and washed with cold water; took a moderate walk, and returned to a good meat breakfast; at eleven in the forenoon and at five in the afternoon he took the douche.

c. Friction in the wet sheet at six in the morning; and a sitz bath twice in the day.

d. Packing in the wet sheet in the morning for an hour, followed by friction in the wet sheet, or cold affusion; the same repeated, or a sitz bath in the afternoon.

e. The full bath for half a minute, followed immediately by the douche for three minutes at six in the morning. The douche for five minutes at eleven A. M.; a flowing sitz bath at five in the afternoon; rubbing with the damp sheet at nine before going to bed.

With such and other variations in the use of the baths, the quantity of water drank and of exercise taken, and the diet of the patient, require often to be as scrupulously measured.

To what classes of cases it may next be asked is the tonic course of the cold-water cure applicable? Without attempting to make a complete enumeration of such cases, I may particularize several groups, and the medical reader will have no difficulty in adding to the catalogue.

1. This tonic course may be employed with advantage in cases of general debility left by protracted illnesses, courses of medicine, hemorrhages,—in short, in general debility not the result of coexisting disease.

2. In debility depending upon constitutional weakness of the circulation.

3. In cases of deficient innervation, comprehending for instance hysteria, in which the use of cold affusion is well known. Mental depression, with powerlessness to exert the mind and body, except at capricious intervals.

Delirium tremens, in which the failure of nervous energy has arisen from over excitement by drink, opium, tobacco. Certain forms of palsy. Palsy of one side in persons not advanced in years, in whom the head derangement which caused the paralytic stroke is at an end, and the causes which produced *that* are no longer in operation. Muscular weakness of the legs threatening paraplegia.

4. In children disposed to scrofula, and even in those already labouring under scrofulous disease, in the joints, bones, or subcutaneous glands. In such cases this treatment is singularly beneficial. It must not be resorted to, when either the lungs or the mesenteric glands are the seat of tubercle.

5. In muscular rheumatism, and in regular gout, in certain habits.

To exemplify the efficacy of the tonic hydropathic course, I select the following out of several cases, in which it has been pursued under my advice:

A lady, now approaching forty, ten years ago left India in a state of great weakness brought on by bearing several children in quick succession, and by the climate. Her voyage home was unusually prolonged, and ended in shipwreck, when she underwent much personal hardship, and the greatest anxiety, being within a few days of her confinement, and having her children with her. Shortly after her confinement in England, her children were taken ill with the hooping cough; and when her home was again tranquil, and the temporary energy, which those occasions had called forth, had subsided, she found herself without strength, or nerves, or health, or digestion. Nor could she rally, but in spite of all her efforts and the best medical care, remained a broken invalid, full of nervous feelings of all kinds, with headaches, pains in the back, occasionally several abdominal pains, and inability to take food enough to nourish her. About three years ago, she consulted Dr. Abercrombie and remained under his care in Edinburgh, and not without benefit. But the bowels were always irregular, generally costive, and taking medicine was followed by days of irritation and distress. In March, 1843, she was further reduced by an attack of dysentery, which lasted a month, and left her in the greatest feebleness and extenuation. However, she

rallied to her former state. The winter of 1843-4 she passed in Italy with her husband and family, but without amendment. Then, in the June following, she came to Mühlbad, thin, worn, with a look of illness, highly nervous, with all sorts of disagreeable and threatening feelings, frequent headaches, no appetite, weak and irregular digestion.

She commenced the treatment with friction in the damp sheet between six and seven in the morning, drank two tumblers of water, and took a short walk before breakfast, walking again at noon before dinner. After two days, she took a sitz-bath in addition at twelve for five minutes; after a week, the same was repeated in the afternoon. Now, for the cold sheet in the morning, cold affusion was substituted; and after some weeks, the douche at twelve in place of the first sitz-bath. She has continued this course of treatment up to the present time, December 1844, varying it or intermitting it, as occasion has required; and now, in the extreme cold of winter, having relinquished the douche and the afternoon sitz-bath.

There have been one or two things against her rapid recovery, (not to readvert to the length of time she had been a confirmed invalid,) first, her anxious and constant care of her children, whose education she superintends, and secondly, an alarming accident which one of them met with, and is still suffering from its effects. But her progress has been notwithstanding most satisfactory. In a few days her appearance improved; she looked less worn and depressed; her spirits revived; for she felt that the treatment agreed with her, each bath leaving her refreshed and invigorated. Then her strength increased very visibly, but for a time her nervous feelings recurred, she said even with more force; and she used to ask me, if all I could do for her was to make her a walking machine. But at length, with improved strength and restored appetite and digestion, the weakness and irritability of her nerves began to give way; now, for a long time she has been materially better, and though not indeed without fluctuation, improving solidly in every respect; and her language this day is, "I have not been so well as I am now these twelve years; I am a totally

altered creature since I came here; I never expected to know again what the feeling of health is."

This lady has twice had boils, but they were not very troublesome; I cannot say that she seemed the better for their occurrence. At first she was so weak, that I often ordered her a glass of wine at dinner, or a tumbler of milk with wine in it at eleven. Once or twice she has had bilious headache, which was relieved by two or three tumblers of warm salt and water.

A gentleman, now twenty-eight years of age, when an undergraduate at the University indulged in some excess, but it did not tell at the time. But five years ago, when preparing to take orders, his spirits and power of mental exertions and his bodily strength began to flag. This increased upon him, and he gradually became a confirmed hypochondriac, unable to bear society, even that of his family, leaving home more than once to live quite alone. Two years ago, he determined to make a fresh effort to shake off his depression, and accordingly he went to ——, in England, to try the cold-water cure. He was then rubbed in the wet sheet in the morning, and in the afternoon took a tepid sitz-bath: and he used daily a lavement of tepid water, with the assistance of which his bowels were relieved imperfectly and irregularly. He took a good deal of walking exercise, and his strength improved, but his spirits remained the same; when after two months' pursuance of this course, he was taken with fever, during which hydropathic practice was abandoned. He kept his bed five weeks. Then he returned home convalescent and mended fast. He used every morning copious cold ablution. But in the winter he again fell back. In the spring, however, he felt himself again improving, when in May 1844, he came to Mühlbad.

He was extremely thin, his pulse 60, the beat unusually prolonged; he complained of an obscure sense of uneasiness seated to the left of the umbilicus, which was aggravated more by certain postures than by direct pressure, and which sometimes entirely left him; his tongue furred, the bowels costive, his spirits low, but not of the character of melancholy, but an utter lack of energy, shrinking from society, taking interest in no-

thing, with inability to keep the attention to any train of reflection or course of study.

He was ordered affusion with cold water at six in the morning; to drink four tumblers of water and to take a walk before breakfast; at eleven and five, a sitz-bath for ten minutes; after each, exercise; to wear during the day a wet bandage round the abdomen; to take a lavement of cold water every morning.

In a few days the state of the bowels improved; they acted regularly with the cold lavement, which was ordered to be gradually discontinued. After a few weeks, the bowels came to act spontaneously and sufficiently almost every day.

He complained soon after the commencement of the treatment, that he could not recover warmth after the morning cold affusion, whatever exercise he took. So he was ordered to be packed in the blanket preparatorily for an hour; but neither this, nor packing in the wet sheet, which was subsequently tried, agreed with him. Both left him dragged and exhausted.

Then he gave up any early discipline; and washing only in cold water when he rose, he had no bath till eleven, when he took the douche, and in the afternoon a sitz-bath. These changes occupied from five to six weeks. He was now able to take much more exercise than on his arrival, but his lack of mental energy was the same as at first. Then counting upon his increased strength, I ordered him the douche at six in the morning; the douche again at eleven; a river bath at five. And this he bore well and with evident advantage. Afterwards he had a warm bath in the morning and two douches in the day; then the full bath with the douche immediately after it the first thing in the morning, as mere change seemed to operate beneficially with him.

He has continued the same line of treatment with occasional interruptions, once from a crisis, by which he thought himself a gainer, up to the present time; and he has made great improvement every way; he takes a great deal of exercise without fatigue, and indeed is at his bath when warm with walking. He has gained flesh in some degree; his pulse is from sixty-eight to seventy and improved in character; and his spirits and power of mental exertion are much greater than they were, but with

fluctuations; though now the right way,—for a brighter day used to be rare with him once,—and now a day of profound prostration is the exception. The pain in the side recurs less frequently, and is less when it recurs. The effect of drinking cold water upon it, he said was this; for a few minutes it seemed to bring the pain on and make it worse, but then it went away the sooner.

A gentleman, thirty-two years of age, was placed under my care by Sir Alexander Downie, M.D., of Frankfort, to try the cold-water cure for delirium tremens. The habit of drinking to excess had been indulged in for several years; during the two preceding, besides wine, he had commonly drank a bottle of brandy daily. His manner was nervous; his pulse was frequent; his hands shook; so that painting, which had before been his principal occupation for the last two years, he had not touched, nor for the same time had he ventured to shave himself. Then this was the history of each day: he would wake about five, and lie for two or three hours in the lowest horrors of dejection; about eight he rose, and took a glass of brandy, and sponged himself with cold water; as the morning wore on, taking more stimulus, he rallied a little, and at twelve could eat some broiled meat for breakfast. In the afternoon he walked or rode, and after dinner, when he had drank freely, he was cheerful for a time, and his nerves were strung again; then he went on drinking, and became stupid or violent, occasioning his mother and sister, with whom he lived, the greatest distress and alarm. Then he went to bed and slept heavily.

The treatment pursued was the following. He was allowed one tumbler of brandy and water after dinner, two at night, which was to be decreased daily, so as to be totally discontinued in ten days,—which was done. Then I had him awakened at half past four in the morning out of his heavy sleep, well rubbed in the wet sheet, dried, and put to bed again, after swallowing a tumbler or two of cold water. He quickly went to sleep, and had to be wakened between seven and eight to undergo affusion with cold water. Then he dressed, drank four tumblers of water, which he naturally found very grateful to his parched throat, while dressing before starting on his walk; on his return from which, to his surprise,

he ate breakfast with an appetite. He had no further bath that day, but was out in the air most part of it; feeling no depression through the reduction of his dose of wine and brandy, but, on the contrary, being in high spirits, and delighted with the success of his first experiment in hydropathy. The following morning the same experiment was repeated with the same result; and for a month, he did this and no more daily, except drinking six tumblers of cold water in the afternoon and evening. At the expiration of a month, the early waking and friction with the wet sheet were discontinued, and he slept well till awakened at six for the affusion with cold water. In six weeks from the commencement of this treatment, after the first ten days of which he had not tasted wine or spirits, and during which he had experienced no depression or craving for his former stimulus, he was cured. His eyes were no longer red, his complexion had become fresh, he had gained flesh, his pulse was under eighty, his hand had become steady enough to enable him to resume his painting and to shave after his morning bath. During the three weeks that he subsequently remained at Mühlbad, he took a few sitz-baths in addition.

II. The Reductive Course.

The basis of this course of treatment is profuse sweating, with just enough cold bathing afterwards to prevent the debilitating effects of the former. The sweating process is repeated twice in the day, or, under special circumstances, is continued for many hours. In the former case, sweating by adventitious heat is often to be resorted to.

The cases in which this course of treatment is required (among invalids who travel at least) are comparatively few; I have seen but two cases, in which it was positively indicated and carried into effect; one, where it would have been good practice, and was not done, many in which it has been pursued, in my opinion, improperly.

The two first cases, to which I refer, occurred, one at Laubbach under Dr. Petri, the other at Mühlbad. The first was in the person of a Dutch officer, who was crippled with gout; he was about forty years of age, of a full and vigorous habit, and had been accustomed, he

told me, to drink a bottle of light wine daily up to the time of his commencing the water cure. The basis of his treatment was being packed in the blanket and sweating twice a day. At the expiration of five months, when he was compelled to leave, he had made very remarkable progress. The other instance occurred in the case of a gentleman, who had urethritic rheumatism; the rather stimulating plan, on which he was placed, brought out a smart attack of rheumatical inflammation in the hands and feet, the skin of which on the palmed surface was brightly inflamed in patches, and the seat of burning pain. The patient for this attack was packed in the wet sheet at seven in the evening, was kept perspiring till twelve at night, when he had experienced some relief; then he was packed in a fresh wet sheet, and left in it till seven the next morning, when he was washed with cold water. He had again largely perspired, had slept, and the acute character of the attack had subsided. He went on with a simply alterative treatment, and eventually got entirely rid of his rheumatism.

Acute rheumatism, rheumatic fever, that most serious and frightful malady, one may hope to see give way to this powerful remedy. I have not had an opportunity, however, of seeing the experiment made. The treatment would necessarily have to be modified for different cases. But repeated packing in the wet sheet would form the basis of it; by each repetition of which the heat would be temporarily reduced, the morbid perspiration checked, and then a new perspiration excited. There exists no reason why the employment of opium or other drugs should not be combined with hydropathy in this, or in other cases, where a sufficient object is to be obtained by it.

The case, to which I have adverted, where the patient suffered from the omission of this reduction process, was that of an officer of the Grenadier Guards, who came to ——, in the autumn of 1843, without much the matter with him; but he had rheumatic gout in his system, of which he had formerly had severe attacks in the hands. His digestion was a trifle out of order, and he had had from a boy a dartrous spot or two at the roots of the hair. Then he was directed to sweat in the morning, and take the full bath; and in the day douched and took

sitz-baths and a vast deal of exercise. He was an uncommonly strong man, in the prime of life. The treatment accordingly proved too stimulating. So that after a few weeks, during which he found his tone of health sensibly improved, he was attacked with most severe and painful abscesses upon the wrist and hands. After suffering for a long time with this crisis, which reduced and shook him, he returned to London. But he still continued to suffer with the remains of the crisis, till he went to Dr. Freeman's establishment at Cheltenham, where he was profusely sweated twice a day and became temporarily well. I saw this gentleman again the following autumn: he had returned to his former treatment, and had again a crisis, but milder; I wondered at his perseverance. But he had formerly been one of the most enduring of St. John Long's patients, and has a turn for therapeutic martyrdom. My impression is, that had either of two different courses been pursued with him,—if he had been submitted at first to the reductive treatment, or to a mild alterative course, he would have derived great and speedy benefit from hydropathy, and escaped much useless pain and illness. But I may be wrong.

I have mentioned that in most cases, in which I have known the reductive method used, it has appeared to me to have been misapplied.

Then, there was at ——, at the same time with the subject of the preceding narrative, a Scotch gentleman, a barrister, who, superficially looked at, was of the same strong frame with his friend. But his constitution was really different, and his complaint, some contraction of one elbow with a cutaneous sore of long standing, indicated a scrophulous origin. This patient was vigorously sweated twice a day; whereby it must be admitted that the local complaint was removed, or almost so. But when I saw him again, a year after this active reductive treatment, he looked thin, and he told me that he had never recovered the strength he had lost by the discipline of the preceding year. I have little doubt that a simply alterative course would have been preferable in his case; packing in the wet sheet and blanket alternate mornings, and the full bath, and little more. Though affected with struma, he had strength enough for this; and the local

complaint would have required it. In cases of scrofula, conjoined with less stamina and at a younger period of life, than belonged to the subject of the present observations, I have seen positive and serious harm done by not confining the treatment to one of a purely tonic character.

Perhaps, however, it is in the treatment of siphilis that the most preposterous mistakes are made in the use of the cold-water cure, when the practitioner has happened not to have had opportunities of learning the habitudes and the laws of that complaint.

Then the common impression, except among well-informed English and continental surgeons, is that siphilis is a disease, which, left to itself, progressively gets worse, and requires therefore to be cured by art. So that the object of the hydropathic treatment commonly adopted for this purpose, is either to sweat the malady out of the system, or to bring it forth in a critical form. Accordingly I have seen elsewhere, and know that the same occurs at Graefenberg, patients staying one or two years, or even longer, and undergoing for that time the full discipline of the cold-water cure for the purpose of thoroughly freeing themselves from the morbid poison. And accordingly, when their skin has gradually become covered with spots and ulcers, and the tongue and fauces are ulcerated, they are satisfied,—nay, delighted at going through these horrors, in the belief that they are thus being enabled to purge themselves of so awful a virus. And in the end they get well, and believe that they have been cured by the treatment they have gone through. But the truth is, *that* treatment only protracted their complaint, and gave its features their severity. The misuse of the cold-water cure in siphilis is parallel to the misuse of mercury. The same original mistake is followed up by the same train of errors. The complaint is fast made worse by over-treatment, and then the treatment is pushed still further with the result of keeping it worse. But there is this difference in favour of the misuse of the cold-water cure; it does not introduce a new poison into the system; it only makes the patient worse for the time being, and sooner or later he recovers with an unimpaired constitution in spite of it. Such is the real nature of this complaint, that every thing which

heats and excites the body, aggravates its virulence, wakes it where it is dormant, brings it out where it is latent, and instead of allowing it to come to an end, prolongs its duration. The natural tendency of siphilis, when once in the system, is to run a certain course, which has many variations dependent, it would seem, on the constitution of the patient, and spontaneously to wear itself out. To accelerate the latter event, the proper course to be pursued is to keep the body cool, especially by abstinence from wine, by extreme moderation in living in every way, in food, exercise, mental application, —nothing more being required, unless it happen that the disease in one of the exacerbations or intermittent outbreaks which characterize its course, threatens to disfigure the face or attack the eyes. In these cases, recourse must temporarily be had to iodine or mercury, not with the idea of then and there eradicating the disease, but simply with the intention of arresting its march in those directions. The troublesome outbreak thus suppressed, the less the patient does in the way of treatment the better. He cannot indeed do better than go to a water-cure establishment, with the object of living regularly, eating plain diet, and enjoying good air. But when there he must carefully eschew much discipline ; exercise to any considerable extent, or repeated baths, are both detrimental, because they heat and strengthen, and bathing and sweating have both the common objection that they specially heat the skin, and aggravate, if they do not directly bring out siphilitic eruptions. The patient must follow the gentlest alterative course. To give an instance: A gentleman, about five-and-thirty years, after primary ulcers and a long course of mercury, had nevertheless secondary symptoms, which consisted in a sore throat, and three large leprous spots showing a disposition to ulcerate on the chest. For these he underwent, for months, a varied course of mercury, sarsaparilla, and iodine; his throat got well, the spots ceased to be inflamed, and began to fade. But now nine months from their breaking out he was thin, and his strength and digestion were considerably impaired; a change, of which he was the more sensible, that previously he had been strong of body and of active habits. Placing himself under my care, he was directed to be

packed every morning till he began to perspire, and then to have water poured over him; and in the fore and afternoon, latterly in the forenoon alone, to take a sitz-bath for a few minutes. With this treatment he recovered appetite, digestion, flesh, and strength; and he prudently pursued it several months, the spots on the chest disappearing, no new manifestation of disease occurring, and his hair, which before had come out abundantly, becoming thick and strong again. From what I have seen in these cases, I am persuaded that much more hydropathic treatment than the above would have brought out some remains of the disease, and made him temporarily an invalid again.

Another case I had to do with, but it was at Marienberg, in the winter of 1842, which forms another comment on hydropathic practice on siphilis. I introduce it here to dismiss the subject.

A patient, about thirty years of age, went to an hydropathic establishment on the Rhine, not at Boppard, in October 1842. His nerves were shattered through excess and dissipation; at times he could not collect his thoughts; then he had siphilitic ulcers in the tonsils, and rheumatic pains. I made his acquaintance on his coming over to Marienberg to consult me about a further aggravation of his ailments through cold; he had been attacked with some rheumatic pains in the head. As he would hear of nothing but hydropathy, I told him to take a cold foot-bath at night, and wrap his head in flannel: the expedient was successful, and he got sleep again. Then one or two siphilitic tubercles broke out upon his face.

Next he came to Marienberg, and with my concurrence placed himself under the care of Dr. Schmitz, who treated him with moderation and judgment. Nevertheless he became worse. The pains in the head returned with aggravation, and were so severe as quite to unman him; and he became alarmingly nervous, with a pulse of 120, profuse night-sweats, and a general crop of psoriasis over his whole person; he was emaciated and haggard in appearance, and I think would have died. So I told him he must consent to be treated by the ordinary rules of medicine, and give up for the present all hydropathic treatment. He took accordingly, by my

directions, two grains of opium every night, and the iodide of potassium with infusion of sarsaparilla in the day, and recovered rapidly.

To take another subject;—no one much acquainted with disease could expect hydropathy to cure cancer. Yet it has been said to do so. And I saw the experiment made in one case under very favourable circumstances at Marienberg and Laubbach, at both of which establishments the patient resided in succession. When I made the acquaintance of this gentleman in June 1842, he was a hale looking strong man, something turned of fifty, of a florid and healthy complexion. The disease was situated at the edge of the tongue; where there was an induration of the size of a bean with an ulcer in it. This patient, whose constitution could afford it better than that of most, strenuously pursued the most active hydropathic treatment, sweating generally twice a day during four to five months. At the expiration of this time I saw him in passing at Laubbach, himself altered in appearance for the worse, his strong frame thinner and shrunk, but the ulcer certainly had a more favourable look; its surface was granulated, clear, and florid, and seemed disposed to cicatrize, though the hardness remained as great as ever. But this amendment was delusive; and barely more than a fornight afterwards, when this patient came over to Marienberg to ask my advice, the ulcer was again foul and spreading. Then I told him he had no time to lose, and that he had better go to London and have the part removed by ligature, an operation which in my crippled state I could not undertake. But he had not resolution to take this step; instead of which he placed himself in the hands of some practitioner at Wiesbaden, who promised to cure him without an operation. The ulcer then continued to enlarge; the glands of the throat too, I heard, became affected; then hemorrhages took place from the ulcer, and the patient sank rapidly, and died in the spring of 1843.

A trivial error common in hydropathic practice is to apply the reductive treatment to severe colds in the head or on the chest. The error is encouraged by the facts, that trivial colds, which would soon get well spontaneously, are not prevented doing so by hydropathy; and that severe colds are often gone through with less inconvenience to the

patient, when he sweats and bathes than otherwise. For the sweating really relieves the cold a little, and the cold bath which follows is a temporary fillip, and makes the patient feel better, even if it protracts his cold. A gentleman, who is a great advocate of hydropathy, and has passed some weeks of the summers of the last four or five years in hydropathic establishments, told me that he went last summer to Graefenberg, with little the matter with him but a cold, which he had accidentally caught, but with a firm faith that Priesnitz would cure that for him at once. However his cold lasted him three weeks at Graefenberg. Then I remember an English lady at Marienberg, one of the most undaunted followers of the cold-water cure, whom I have known, who for a cold consented to be wrapt up in the blanket twice a day for a fortnight: but at the end of that time she was no better, and was compelled to give in by the weakness and giddiness, which such violent perspirations had brought on. The proper remedy for a severe cold is to keep for three or four days in a warm room, and take light and great part liquid diet. This I knew before I tried hydropathy, and therefore deservedly suffered, when I allowed myself to believe and to be lured to try sweating and cold bathing as a substitute. To impress this point the more strongly, I will narrate another passage in the case of a patient, which I have already part given under the head of exercise. He was as unfortunate in his second essay of the cold water-cure, as he had been in the first.

Now undismayed by what he had undergone, he came to Marienberg in June 1843, while I was yet there, and because I was there. He brought with him a severe cold and bronchitis, which he had contracted on his journey; and which, being a surgeon, he knew well enough how to treat. But feeling a delicacy in Dr. Schmitz's house, as to the use of any remedy but hydropathy, and being, notwithstanding his past experience, still a staunch believer in the whole system, he put himself into Dr. Schmitz's hands to be cured. Accordingly he was packed in the blankets, with a wet bandage applied round the chest twice a day for three to four hours, and profusely sweated; and the operation terminated by his being washed with cold water, which brought on as regularly as it was used suffocative fits of

coughing. However he went on with this for three days, till his condition really became alarming, which I led Dr. Schmitz to see, who then proposed that I should take him under my own care. All that the poor fellow wanted was warmth and quiet,—just to be liberated from hydropathy. So ordering him some warm diluent, I left him to the repose he needed; and I found the next morning, that, exhausted as he was, he had slept well without using the opiate I had placed at his bed-side. He woke refreshed, his cough looser, his chest less sore; and living on tea and broth for a few days, he was convalescent.

I will conclude these remarks on the reductive course in hydropathic treatment, by observing that it promises to be of signal value in the cases which on intelligible medical grounds require it, of which the most prominent are the asthenic forms of gout and rheumatism; but that when not so required, it strains the system and is liable to be very mischievous. And there is this source of delusion attending it: persons of fair strength, in whom it is employed without any occasion, are not at the first the worse for it; but with keener appetites and invigorated powers of digestion, at first even gain flesh, while they are pursuing it. After a while they, unaccountably to themselves, fall away through what first agreed with them, and lose flesh, strength, and tone of health. But I am explaining this, as if it were surprising; and I dare say many such peculiarities occur in this volume.

III. The alterative course.

The basis of this mode of treatment is the employment of the two antagonist means of sweating and cold bathing in counterbalancing proportions; to produce free perspiration, but not to reduce by it; to give tone by cold bathing, but not to stimulate; to bring the other secretions to a wholesome state by exciting moderate action of the skin; to give tone to the stomach and alimentary canal by draughts of cold water; to promote all the vital actions by moderate exercise; these are the intentions of the alterative course.

Thus the patient is to be packed every morning in the blanket, or in the blanket and wet sheet alternately, till perspiration commences, and then to have water poured

on him or to take the plunge-bath. This, with attention to the accessories of hydropathy, and drinking a few tumblers of spring water at appropriate hours, constitutes the essential of the alterative course. And it certainly seems difficult to imagine a course of treatment on the one hand less exceptionable on any ground, on the other better calculated to work a salutary change in the blood and the system. Certainly the ordinary resources of medicine, the small dose of blue pill at night, the tonic aperient draught in the morning, or a course of alkalies and sarsaparilla, or what not, however useful these means, when others are not to be had, are not only experimentally but to one's common sense, resources, that promise less than the simple hydropathic course above specified. For it is to be borne in mind that the function of the stomach, and the action of the bowels, on which so much turns in the restoration of health, are invariably improved by hydropathy, and that these effects are obtained without nauseating the one organ, or heating the other.

Then what I have specified as constituting the proper alterative course in hydropathy, simple as it is, contains all that is necessary for the restoration of a vast variety of cases. And there are many and many patients, the progress of whom towards recovery is materially retarded by complicating the treatment, and subjecting them to increased discipline. As the physician is often pressed by the patient himself to allow him to do more than is right in his natural anxiety to get on faster towards health; and as the hydropathist may be supposed to have a bias in favour of employing many baths, the patient seldom escapes with so little discipline.

Often again more treatment either is at first requisite, or shortly becomes so. The alterative course has often to be shaped to one or other additional character.

It has to be rendered often, alterative and tonic,—when sitz-baths, douches, river-baths, have to play their part in the fore and afternoon, following the early morning discipline.

Or it may require to be rendered alterative and revulsive, of which long-continued frictions in the half-bath are the characteristic element. Then let me briefly specify what the cases are, which are likely to derive benefit from an alterative hydropathic cause.

There are many, who have started in life with every promise of enduring health and strength, yet who "nel mezzo del cammin" either from over-exertion of thought or anxiety, neglect of proper relaxation, neglect of exercise, living in confined air, errors of diet,—from some or all of these causes combined have found that promise defeated. Their spirits have lost their elasticity, their temper has become irritable, mental exertion is often an effort, and leaves them unstrung and exhausted; they experience head-ache and loss of sleep, the appetite and digestion are capricious, the bowels torpid, they look out of health, and with no positive illness are yet standing on the threshold of disease. Head disorder, confirmed dyspepsia, irregular gout, this or that local ailment may come out of such a beginning, and convert them into permanent invalids, or at the lightest event throw them temporarily out of their career of active life and useful exertion.

To the large class, whom this outline embraces, the invention of hydropathic establishments is a signal benefit. Two or three or four months of the cold-water cure will serve, not to patch up these threatenings of disorder, (which is just what ordinary expedients do,) but to restore the patient to sound and solid health, with the comfortable conviction, decided from the thorough restoration he has obtained, that by attending always more or less to the rules of hydropathy, or if need be, resorting from time to time to its strict discipline, he may preserve the renewed blessing of health without relinquishing an active career in life.

Gout has hitherto been one of the "opprobria medicorum." Sydenham could only console the patients, whom he could not cure, with the remark that the wise and the wealthy are its surest subjects. Now hydropathy can eradicate gout; and this not only in incipient cases, but in all but a few extreme cases of old standing and great inveteracy. And the method is the simplest in the world; all that is generally needed is the alterative course of the cold-water cure. If this practice alone is followed, in most instances the patient progresses with nearly uniform amendment to health. If much more is done, the patient, it is true, likewise gets well, but not more soundly, and not in so short a time, and not without his system

being heated and disturbed, and incurring attacks of gout, fever, or crisis of one sort or another in his progress to recovery. Or this I am strongly persuaded is generally true, although without doubt cases occur in which the mildest alterative treatment will excite considerable constitutional reaction; and although, on the other hand, there are many cases of gout, which require more complicated treatment, some needing a reductive, others a tonic course.

The great use of hydropathy in gout is to eradicate the complaint, not to subdue what are called fits of gout. Over these indeed it has great power, used in some instances reductively, of which I have given what might serve for an example, in others sedatively. But, in general, it is better to subdue a fit of the gout supervening under hydropathic practice by the assistance of opium and colchicum, without interrupting the general treatment. The fit is thus disposed of more quickly, and at less suffering to the patient; while the radical cure of the complaint goes on as before. I am aware that the soundness of this advice will be questioned by many, who have had experience of hydropathy. In that case my reply is, try and compare both systems before you condemn mine. It is a system, which experience can alone decide, whether encouraging critical attacks of gout is of use in getting rid of the diathesis; whether bringing it out tends to eject gout from the system. This idea is a very old one, and forms the basis of the treatment of gout by bathing in hot springs. The patient, who formerly went to Bath for gout, was tolerably sure to have a fit of unusual severity brought out. On recovering from this he was not, however, cured, but he only experienced a longer interval of health before the recurrence of the next fit. But if a patient, by other means—by an accident, through exposure to weather, and what not, has an unusually severe fit of the gout induced, he is equally and likewise exempt, in consequence of the severity of that attack, for a longer period than usual from its return. But a violent sprain, or a cold, or exposure to fatigue, certainly are not means calculated to eradicate gout. So I am disposed to consider fits of gout brought out by hydropathy as tending to delusive improvement only, the results no doubt of the treatment, which is liable to heat and excite the system,

but accidental and really useless results, to be deprecated and to be suppressed and got rid of as speedily as possible. I believe that each severe fit of gout tends either to the disorganization of the part attacked, or at least so to weaken it as to render it more susceptible of a return of morbid action. The true object of the curative hydropathic treatment should be to get rid of the complaint without any such explosion, to drain it off silently, as it were, not to make it burst forth, to conduct it gradually out of the system, while the latter is undergoing a long and tranquil process of renovating change, of alterative restoration.

Constitutional rheumatism, irregular gout, blind gout, dumb gout, general gout, or by whatever name this troublesome complaint is in preference designated, yields equally well and surely with regular gout to the cold-water cure.

This complaint presents three principal varieties: in one its exclusive seat is the muscles, tendons, ligaments; in a second, its characteristic seat is the synovial membrane of the joints; in a third, the periosteum.

The first of these forms, with which many a patient is afflicted for years, and more severely with his advance in life, but with fluctuations, now better, now worse, each perhaps in dry temperate weather or at the setting in of frost; and at the worst, in extremely hot weather or in damp or cold, may be regarded as the mildest, having fewest complications, the most removable, leaving no impaired organization.

The second is the most formidable, from its liability to cripple the joints, which it does in two ways; first by leading to their being drawn out of shape through the action of the muscles, or forced out of position by accidental pressure at the time when the synovial cavity is distended with fluid and the ligaments are elongated; secondly, by filling the joints with lymph, which adheres, blocks up their motions, irritates them, and prolongs the chronic inflammation of the membrane, during the acute inflammation of which it was poured out. I have seen the same effusion lying in little white pearly flakes in the joints of a boy, who died of pericarditis occurring in connexion with acute rheumatism. When severe, this form

of general rheumatism involves subordinately the fibrous tissues, including even the periosteum.

I do not know the cause of acute rheumatism, but whatever it be, it can originate, or lay the basis of chronic synovial rheumatism.

Chronic synovial rheumatism, like muscular rheumatism, like gout, is likely to be produced by any cause, which enervates the body.

The same, or a like form of disease, is liable to follow gonorrhœa. The third form of constitutional rheumatism is that in which inflammation of the periosteum predominates. The patient in this complaint experiences indeed, more or less, muscular rheumatism; but its special feature is the development of painful and tender periosteal swellings, which subside after a longer or shorter period, sometimes not without leaving the surface of the bone permanently thickened. This complaint is particularly liable to occur in patients who have taken much mercury for siphilis. It is not siphilis, however; for it has no other feature of siphilis combined with it; it is a form of rheumatism and other rheumatism goes with it.

In all these cases, the alterative hydropathic course is positively curative, and capable in most instances of entirely eradicating the complaint. It is, however, often desirable to employ medicine, iodine, colchicum, opium, for example, to combat any sudden outbreak, which may be excited during the patient's progress to recovery.

Of siphilis I have already spoken in connexion with the seductive hydropathic course. I have there briefly explained the principles on which that complaint is to be treated. But there are besides cases, in which siphilis is complicated with the effects of mercury; in these cases, and where siphilis and scrofula coexist to modify each other, hydropathy is of great value; and of its forms a tonic and alterative course.

Finally, there are cases of pure scrofula, to which, in consequence either of the strength of constitution of the patient, or the inflammatory character of the local disease, the alterative hydropathic course is properly applicable. Generally, however, where I have seen sweating employed as part of the treatment of scrofula, it has been manifestly injurious.

Leaving the subject of general constitutional disorder, I have next to recommend the alterative hydropathic course as the basis of treatment in those complaints which manifest themselves as diseases of organs, the health being otherwise sound, or presenting no marked peculiarity or feature not dependent as a consequence on the local disease. It is obvious that to give tone to the stomach, that regularity to the action of the bowels, free course to the function of the skin, to place the patient, so to speak, in a general posture of health, is on the one hand to give Nature fair play, and unable the vis medicatrix, if the case is within her scope, to restore it; or on the other, to enable any special means, whether medical or hydropathic, to be employed with the greatest prospect of advantage.

Then, to begin with disorder of the stomach itself, indigestion in its various forms, has a fair chance of being set right by an alterative hydropathic course, assisted by sitz-baths, and the wet compress round the abdomen.

In like manner, congestion and disordered action of the liver, torpor of the bowels, local disorders of the rectum, may often be successfully attacked; to the last two instances it is evident that sitz-baths, cold lavements, ascending douches, must be of service.

In the early part of the case of the Rev. Mr. G——, and in another case given under the head of water drinking, I have exemplified the good effects of some parts of the cold-water cure upon urinary diseases. It is questionable how far sweating is applicable to this class of cases in general.

But in uterine complaints the efficiency of this system reappears. Between hot sitz-bath and the cold, and with injections of tepid or of cold water, backed by the alterative or tonic and alterative course, very many disorders of the womb may be set right. There was in the summer of 1842, at ———, an English lady, a mother and widow, about thirty years of age, with an immense fibro-cartilaginous tumor of the womb, which gave her the appearance of being advanced in pregnancy. She arrived out of health, suffering pains in the back, and worn with apprehension. This lady quite recovered her health under the use of an alterative and tonic system, or rather one, in which a mass of treatment was employed,

amounting at one time to seven operations a day, in the expectation of diminishing the tumor. This was of course a futile attempt; but the force of the whole hydropathic system in restoring health was never better exemplified than in this instance; although it is the lady's conviction now, and certainly my own, that she would have been better still had she done but half of that she was led to do.

Disorders of the skin are not the best cases for hydropathy; inasmuch as the hydropathic means all tend to irritate the skin. Nevertheless as disorders of the skin are often the result of general derangement of health, many are thus cured. Their treatment requires a very light hand, and the frequent substitution of warm or tepid baths for the cold bath.

Then not to push the pretensions of the cold-water cure in the treatment of local diseases too far, let me conclude by specifying some disorders of the nervous system, in which the alterative hydropathic course is available.

Hemiplegia, the common form of palsy of one side, dependent on disorders of the head, the extinction of which and its liability to recur are uncertain for the most part, occurring in persons not advanced in life, is one of these. Then the patient, on his deriving improvement in health and gaining strength in his palsied limbs by such a course, is apt to be led to combine the most tonic means with it; and to hope everything from the repeated use of the douche which at the time seems to impart new energy to him. But this modification of the treatment is to be tried and watched with the greatest caution. There was an English physician, who when I first went to Boppard, was already a patient at another establishment on the Rhine. He did me the favour of coming to see me to encourage me, by exhibiting to me his own progress. He was recovering from hemiplegia, and had gained much in health and strength. When I heard his case, and learned what he was doing, douching with sweating and bathing, I could not help warning him against getting into too florid health, and pushing the stimulating treatment too far. For though the latter was evidently doing him good, as far as the old palsy was concerned, yet it was equally calculated to excite his cir-

culation too much for the safety of his brain. However, he has gone on, during two subsequent seasons, with a similar treatment, being only twice in this interval warned by unmistakeable threatenings. In the autumn of 1842, his friends observed that his speech was thicker and slower, and his thoughts at times less collected; and in the summer of 1843, he experienced a head attack, with temporary impairment of vision.

Paraplegia, palsy taking the body crosswise, and affecting the lower half, and subsequently liable to rise and invade the upper extremities likewise, however frequently dependent on incurable organic mischief, yet is nevertheless often functional disorder only, primary weakness of the spinal marrow, or failure of power, dependent upon derangement of the health, strain of the system, sympathy with other organs. Now when paraplegia is of the latter nature, it is susceptible of relief, and by nothing so efficiently that I have seen as by hydropathic remedies.

Again, paraplegia sometimes arises from disturbed circulation in the head, and then hydropathy steps into its relief on other grounds, and a reductive and a revulsive course is likely to be of service.

There was a Russian officer for a short time at Marienberg in the summer of 1842, who had undergone ineffectually much treatment for this combination of disorder; with threatening feelings in his head, he was losing the command over his legs. He was too short a time at Marienberg to give the treatment there a fair trial; but he was getting worse, so he hurried on to Graefenberg. And it was with great interest that we learned in the autumn following, that he had there become much better. Our informant was M. Scoutetten, of Strasbourg, a distinguished French army surgeon, whom Marshal Soult had sent into Germany to examine and make a report upon the cold-water cure. M. Scoutetten's book on the cold-water cure is one of the most valuable which has been published on the subject. He brought us some very interesting details; and his account of the progress of our Russian acquaintance was amongst the most so. For at Marienberg the treatment employed had involved applications to the patient's head, and the patient had got worse. Whereas Priesnitz, with great practical saga-

city, had left his head alone, and trusted for its relief to general revulsive agency, which had the happiest effects. The case I refer to is that of M. G. de D——, given at p. 443. of M. Scoutetten's book.

In lighter head disorder, nervous head-ache, head-ache from determination of blood, and their complications, it is evident how much is to be expected from an alterative hydropathic course, conjoined with the use of sitz-baths, foot-baths, and the like.

There must be some cases of epilepsy, to which hydropathy would be applicable; but only three have been treated by this means in this neighbourhood within my knowledge. One, that I did not see, died; a second, that I saw at Marienberg, likewise died; a third, that I likewise saw at Marienberg, was sensibly the worse for the treatment.

I will now give the details of a few cases treated with advantage upon the alterative hydropathic course.

A gentleman about fifty years of age, not robust, but of a constitution naturally of great endurance, of moderate habits, but having led a life of activity and exertion at home and abroad, had been liable from his youth to occasional severe attacks of headache. At the age of forty he had for the first time a regular attack of gout in the toe, which recurred the two succeeding years in the spring. Then he had gout more frequently, and his old attacks of headache connected themselves with it, and became its precursory symptom. Between five and six years ago, suffering from the frequent recurrence of these attacks, each indeed of which admitted of relief, and could be shortened by medicine, especially by colchicum, I recommended this gentleman to adopt a very strict regimen, and to entirely relinquish wine. The consequence of this change was temporarily very beneficial; in a few months his health had sensibly improved, and then for two years he was entirely free from gout. But though thus moderate in diet, he was not so in mental exertion, undertaking much public duty, and being engaged in private affairs which involved thought and anxiety. Then his health gave way again; but the disorder, which now supervened, was no longer regular gout, but more allied to rheumatism; and from this, after it had once attacked him, he was for a long time never free,

suffering pains now in the ancles, then in the side, in the neck, head, elbows, hands, with swelling and articular and periosteal tenderness, sometimes confined to his bed, and unable to walk or stand for the pain and weakness of his feet. However, in the autumn of 1842, he was again better. But after Christmas the complaint returned with renewed violence, and after much suffering in the spring, he went to Leamington, and placed himself under Dr. Jephson's care. But before he had time to be benefited by treatment, he became worse, and one morning, a fortnight after his arrival, he found himself temporarily blind of one eye; but this unpleasant symptom wore off with his general amendment; and in about six weeks he was able to get about a little, and then he made his way home. Then he underwent another attack, having pains flying from joint to joint, and for the first time experiencing severe lumbago, which confined him to his bed. As soon as he was again better and well enough to travel, being now in August, he came to Boppard, to place himself under my care. He was thin and pale, could walk but a short distance at a time from pain and weakness of his ancles; he had periosteal tenderness and pain about the elbows, and two or three of the fingers, and the gout was moving all day from joint to joint.

Thus full of gout, it was evident to me that an active course of hydropathic treatment would in a fortnight bring on a severe attack. I therefore ordered him to do no more than to sweat in the blankets every morning, and to take the plunge-bath afterwards. Even this moderate treatment stirred up the gout a little; so that the first few mornings, on getting out of bed to be wrapped up, he could not stand for pain and weakness of the hip and legs. But these feelings went away during the sweating process, and after the plunge-bath he could walk frequently well. And each day he became sensibly better, stronger, and capable of more exercise. At the same time his appetite improved and his digestion became excellent, and the action of the bowels regular. By the end of three weeks he was an altered person, and when he went away at the beginning of October, he had been for some time in vigorous health, qualified only by an occasional tenderness of one or other finger-joint; or in the morning once or twice stiffness of the hip,

which the morning's discipline carried off. He drank two tumblers only of water, and these before breakfast, and none afterwards except at his dinner. He had always been accustomed to drink little, and he found that drinking more created uneasiness at his stomach. One circumstance in his case I viewed as very favourable for the treatment: his skin was naturally dry, and he had always felt himself better, when he had been made to perspire by exercise. On returning home he continued to sweat and bathe daily till the following spring, with a few interruptions, when he was occasionally from home. And with the exception of a few days threatenings, which immediately followed his return in cold and inclement weather, he has continued to enjoy the health he had regained. So in April 1844, he wrote me the following: "But what shall I tell you in return of my own bill of health? I am really afraid to touch upon the subject, lest I should breakthe charm, and dispel the pleasing vision that I am, and have been enjoying, of fancying myself quite well, for I can scarcely yet believe in the entire reality. Two of my fatal months, February and March, are passed; and April (always passed in a sick room, or in recovering from previous illness) is now far advanced, and I am strong and hearty, eating, drinking, and sleeping like my neighbours, or rather setting them the example of well-being." In June last, I had the pleasure of seeing this gentleman at Mühlbad, perfectly well.

A lady towards sixty years of age, extremely delicate in appearance, came from Marienberg, where she had recently commenced the hydropathic treatment, to Mühlbad, in the early part of July 1843. She had suffered during nine years, having experienced, however, no one severe attack, but having constantly rheumatic pains in the hands and feet, not often amounting to much, but becoming aggravated in damp and cold weather. Gradually her hands had become distorted, the fingers being drawn towards the ulnar edge of the hand, the knuckles swelled and not admitting of extension; she could not hold her knife and fork. Her feet were contracted, painful, and tender, and she could with difficulty walk a few yards. She had tried various remedies, all of which had failed to produce any effect, except hot baths,

which made her worse. Her hydropathic treatment was the same as in the preceding case. She remained under it two months. In that time she had made very remarkable progress, the rheumatic pains having much abated, and her strength materially improved, so that before she went away she was able to walk three miles at a time.

I will now introduce my own case.

About seven years ago, at the age of forty, after a life of more exertion and excitement than it seems I had strength for, I experienced nervous symptoms, which I thought then were gout, occasional faintness, two or three attacks of semivision, and the like. Then in the spring of 1838, a few weeks after sleeping in a damp bed, which gave me at the time a very severe cold, I had attacks of rheumatism or gout in the elbow and wrist, and then in the knees, hip, and shoulders. From the first attacks I seemed to recover entirely, though I was reduced in weight and strength. These attacks were attended with intolerable pain, which at first I could relieve by means of cupping or leeches. Afterwards the attacks became less severe and more general. At length, in March 1841, being no longer able to walk even with assistance, I left London for Bath. There, in consequence, no doubt, of my having so long struggled against the complaint, and given it time to take a thorough hold of me, at first I became worse. I could not even stand. In the morning, on waking, my joints were as if painfully glued up; and with painful efforts I could only gradually get some pliancy into my hands and elbows, and hips and knees. I used to sit up most part of the day, and by the evening my ancles and feet had swelled to a great size, and the skin was tense and glistening. By the morning this swelling went down, but when I was held upright, the veins of my legs stood out distended and tortuous. The joints of my limbs were swelled with effusion into the synovial cavities, in which portions of lymph, some floating, some attached, were distinguishable. I had wasted to a skeleton, and my elbows and the end of my back bone were nearly through the sore and inflamed skin. However I became decidedly better before I left Bath, through the kind advice of Dr. Barlow, Mr. Norman, and Mr. Wood. I returned to town in June 1841, where I remained, improving a little

and getting about, but unable to rise from my chair or to walk without assistance, except on a few remarkable days, when I was unaccountably better: but I gave lectures and wrote my work on the nervous system. In the spring of 1842, the setting in of warm weather, as usual, made me worse, and I became again in more pain, my joints were more contracted, and I again wasted, and became weaker, and was frequently obliged to lie down nearly the whole of the day; what much interested or excited me, however, would almost always enable me to crawl with assistance about a room; and I was not so bad at the worst as I had been at Bath. Then following the advice of Sir James Clark, to which I had before owed much, and by which I had been principally guided in my treatment the last year, and of Dr. Swayne, who had undergone the hydropathic treatment, I came to Germany to try the cold-water cure.

I should here mention, that in my first attacks, colchicum had always done me good; that hot-air baths had relieved me for the day, but made me weaker and sensibly worse afterwards; that hot baths, though very agreeable, made me immediately worse: that when I resided at Bath, I was twice bled, and took small doses of calomel and opium every night; and that during the winter and spring of 1842, I had been sustained by taking laudanum at night, which agreed remarkably well with me: latterly I took two drachms at a dose; during the day I required none.

I reached Marienberg, which I selected because I could make the whole journey to Boppard by water, without much fatigue. I began the treatment immediately, sweating in the blanket every morning, and then having cold water poured over me, for which as I become stronger the cold bath was substituted. In August I began, in addition, the use of the douche, of which I took at first one, then two a day, but irregularly, till the middle of November; when I discontinued them, and have since used nothing, except as an occasional experiment, but the sweating and the full bath; and these I was obliged to discontinue during the month of February 1843.

The course of treatment has proved very beneficial to me. From the first I gained daily in strength and flesh,

and appetite and digestion. In the first week I was able to discontinue the use of laudanum at night. I had at the end of this time two or three sleepless nights, but they were unattended with the nervous depression I had used to experience on omitting to take laudanum in London. The stimulating effect of the treatment served as a substitute. But in two or three weeks, though I was better in myself and stronger, the rheumatic pains became worse; and in six weeks I had a slight attack of fever, followed by an eruption like the shingles on my neck and shoulders; this was attended with the most troublesome heat and itching, which after a night or two of superfluous suffering, I tranquillized by a dose of laudanum. I have since ten or a dozen times taken laudanum beneficially at night, when my sleep had been otherwise prevented by irritation of the skin, or an increase of rheumatic pain. After this little crisis the rheumatic pains in my neck and shoulders were, I thought, better. The use of the douche, which I soon after commenced, then appeared of great service to me: it stimulated my nervous system powerfully, so that I could often stand with firmness, and walk a few steps, while being dressed after it: then, contrary to my conviction of what was prudent, I tried to recover the use of my joints through forced exercise. Both the use of the douche and these exercises was a grievous error. For though my muscular system was then temporarily strengthened, yet the inflammation in my joints was aggravated: my knees and ancles especially suffered, and became more swollen and heavy, and at night the latter were now again of immense size. The strength I thus gained was ill-purchased at this cost. At last I could not walk a step with my swelled and heavy legs; and I fell back considerably in December and January. The damp and cold of the season affected me, and I think that I sweated too much. Through the latter cause my skin broke out into a troublesome rash, which did me no good, and only subsided on my discontinuing the treatment in January. I should mention, that in September 1842, and twice afterwards, I had several boils, which being painful, when I got rid of them I fancied myself better. During the month that I discontinued treatment, my joints became stiffer again. On resuming the treat-

ment in March, I again made sensible progress. During the summer of 1843, I continued advancing in general strength more than any other way. I was packed in the blanket, and bathed daily; and did no more. In the winter of 1843—4, I discontinued bathing entirely; and lived sparingly, eating no dinner; but this I found annoy me by producing constipation. In the spring of 1844, I resumed sweating and bathing, and the ordinary diet of the establishment; then I made a great start, but my skin became again extremely irritable; then I discontinued bathing regularly, and have since resorted to it occasionally only. In September, I found myself almost suddenly much better; my feet and ancles, which up to this time had regularly by the evening become large and heavy, ceased to swell, and were hardly larger at night than in the morning; my knees at the same time became reduced in size, and I could stand every day, and most days could walk a few steps. As I expected, I have since fallen back a little; but I can now always stand without support on both legs, and I am confident that next summer I shall make the remaining step of walking. In general strength I palpably improve every quarter of a year; the rheumatism burns out more slowly.

A gentleman, about thirty years of age, tall, extremely thin, worn, and with a look of ill-health, became my patient at Mühlbad, with the following illness. In the years 1828—29—30, he took several severe courses of mercury, once for siphilitic psoriosis, else for primary symptoms. After this having taken sarsaparilla, and being at the sea-side, he was well, and continued so the winter and summer following. Then in the autumn of 1832, he found himself occasionally giddy, and in danger of falling if he turned suddenly, and it was with difficulty that he could walk straight; after three weeks he felt better, but during the whole of the winter he experienced occasional attacks of giddiness. Then he had periosteal swellings on the shinbones, which however went away; deafness too in one ear, the tonsil being enlarged; in the summer following, diarrhœa, and he continued out of health. But in 1835, he went to Italy, and there again became perfectly well. Returning to England he again suffered from looseness of the bowels;

was better towards the autumn; then went abroad, and passed two years in the east, where his health seemed completely re-established. But being again in England in February 1838, he caught cold cutting trees, had stiff neck and rheumatism of the shoulders and arms: and the glands in the neck and axillary and inguinal regions swelled. By the advice of Mr. Key, he took the iodide of potassium, which did him good. Then in May he went to sea on a cruise, and came back much worse; resumed the iodide of potassium, and was pretty well during the autumn and winter. But ever since he has suffered with intermittent attacks of periosteal rheumatism, to give the complaint a name; that is to say, he has had continual recurrences of painful periosteal swellings of the head, sternum, clavicle or ribs, with rheumatic pains in the neck and shoulders, the loins and legs, or all over him; the pains being aggravated at night. Getting thus better and worse, there have been several intervals, when for two or three weeks together he has been free from every symptom. In 1840, when at Rome, suffering severely with painful swelling of the frontal periosteum, he derived relief from the frequent application of leeches to the forehead and blisters behind the ear. Afterwards he took cod-liver oil with no advantage. Preparations of iodine, principally the iodide of iron, then proved beneficial to him, and would always produce a temporary amendment. In the winter of 1842—3, he went to Leamington, and under Dr. Jephson's advice took steel and acids with temporary advantage, and afterwards the iodide of iron, and left certainly better. But in the spring, at which season he is commonly worse, he again fell back, experienced great general discomfort, with headache, sharp muscular pains, and emaciation. Then in the early part of the summer he went to ———, in England, to follow the cold-water cure. He rose and washed in cold-water at seven; walked and breakfasted. At ten he was wrapped up in a cold sheet and afterwards had a cold slipper-bath; at one took a shower-bath; at six, P. M., rubbing with the wet sheet. The system agreed excellently with him: his appetite improved, he gained flesh, and in a fortnight the pains had much diminished. He then came upon the continent with some idea of going to Graefenberg; but stopping at

Schwalbach, he was persuaded to try the waters and combine their use with hydropathy. After the wet sheet in the morning, he had a plunge-bath of the mineral water; in the afternoon he was rubbed with the wet sheet. The experiment did not answer. His head felt heavy, and he had giddiness. Then he discontinued the Schwalbach water, when in a few days diarrhœa supervened, under which he quickly lost ground. After a fortnight he came to Mühlbad, worn and thin, with diarrhœa, periosteal swelling, and rheumatic pains.

I gave him tincture of catechu and cinnamon with laudanum to stay the diarrhœa, once or twice a day; and then he resumed the cold-water treatment, drinking, however, little water: being wrapped up in a wet sheet at five, A. M.; at six, taking the plunge-bath, and at eleven a douche. But it was three to four weeks before the bowels became settled; his pulse naturally slow, during that period continuing ninety in a minute, rheumatic pains flying about him, and the periosteum either of the clavicle, sternum, or occiput, being swollen and tender. Two or three times during this period his head became uneasy, with threatenings of giddiness. Then he took a grain of calomel at night with a dose of rhubarb and magnesia the following morning, omitting the wrapping up and foot-bath, but taking the douche, and each time was the better for the dose. So under the continual use of the astringent medicine, the bowels being throughout disposed to looseness, with the occasional calomel aperient, the irritated state of the mucous membrane of the bowels subsided, and the pulse fell to 70. Then he began to advance most satisfactorily; the periosteal swellings and rheumatic pains dispersed, and his complexion had become healthy, as he had gained flesh, when on the setting in of bad weather towards the end of September he returned to England with the intention of continuing the same treatment at home.

Another gentleman was under my care first at ——, and afterwards at Mühlbad, who had the same constitutional complaint with nearly similar features. He is twenty-five years of age, and in early youth had taken mercury profusely. Five years ago, having in the interval enjoyed good health, he was seized with severe pain and tenderness of the tuberosity of the os ilä; it was limited

to a very small extent, but the pain was most acute: leeches and time relieved it: but there was left a permanent thickening on the bone. Four years ago, on his route to Italy, he caught a severe cold in his head, and periosteal inflammation attacked the bones of the nose: there was much discharge of mucus; after some weeks, one of the turbinated bones came away, and the ossa nasi became slightly tumid and prominent, and have continued so. Next he had a severe attack of periostitis of the shoulder bone, which lasted three months, and left a permanent thickening. Three years ago he had periostitis of the upper part of the femur, and severe sciatica. Then he was better, and passed the summer of 1842 in health. But in the autumn his health failed a little, and after exposure to cold when heated in brewing, in December, he had a severe attack of lumbago. Shortly after his recovery, he was again laid up with rheumatism principally affecting the right hip and thigh. He had pretty well recovered from this, when he came to place himself under my care at Marienberg, in April 1843. But he complained then of stiffness of the right thigh, and the periosteum was thickened and tender about the insertion of the glutæus maximus, and he had stiffness and occasional pain in the loins, and there was a slight periosteal swelling on the sternum. He was ordered to sweat and take the plunge-bath, with a sitz-bath for five minutes twice a day: shortly afterwards a douche at eleven in place of one of the sitz-baths: then he complained of the chill of the douche, and Dr. Schmitz pressed upon him the use of the staub-bad. The weather was cold and unfavourable, and exposure to this bath brought on a severe attack of rheumatism of the loins and thigh, principally of the latter, where it fixed on the periosteum, and seemed to extend to the sciatic nerve. He became greatly worse under the hydropathic measures, which were used to combat the attack, and at last so seriously ill with pain and fever, that I felt it my duty to recommend him to desist from what he was doing, and took him under my exclusive care.

Then I gave him for three nights half a drachm of laudanum and tincture of colchicum, and five grains of the iodide of potassium three times a day. He obtained sleep the first night, and woke much relieved, when I desired that he should be wrapped up and sweated,

and go into the plunge-bath (means that he had not latterly used.) By the third day he could again walk. The iodide of potassium was continued a week; afterwards only the morning perspiration and the plunge-bath.

He came with me to the Mühlbad, where he stayed three months, and for the first half of this period greatly and progressively mended. The hip seemed to get well at once under the treatment I have mentioned; but after a while the periosteal swelling on the sternum began to enlarge, and the complaint evidently threatened another, though mitigated outbreak. He became a little better generally, but not much, at this time. His subsequent progress has been satisfactory; and in a letter, which I received from him in April 1844, he thus speaks of himself: "My bodily health is really good; and I have had only three attacks, and those very slight ones, since last November. This is very good; and I begin to think my constitution has taken a turn at last."

A gentleman came to place himself under my care at Marienberg, which I had then just left, in May 1843. He was thirty-six years of age; naturally of very considerable bodily strength, but of late fallen away; for he had been gradually worn by indigestion, with which he had suffered many years. He had twice been at Leamington to reside for three or four months, each time with benefit, then he fell back. His power of digestion was very capricious. His bowels were always irregular, generally costive; he seldom eat a meal without uneasiness following it; when that reached a certain point, he had headache likewise; and about twice a week the latter would attain such severity as to cloud his thoughts and render him perfectly incapable of the least exertion. But he had a certain remedy. He took two or three tumblers of warm water, unloaded his stomach of half-digested food and glairy mucus; and then his headache went away. He was ordered to be packed in the blanket, and to take the full bath every morning, and at eleven and five a sitz-bath for five minutes, and to wear a wet linen compress round the belly renewed at each bath; to drink ten tumblers of water daily, four before breakfast. For breakfast and supper, tea or chocolate, with eggs at the former. The effect of this treatment was really marvellous. I should observe that he had been so bad the day after his arrival, as to

render recourse to vomiting necessary. But on the third day of the treatment the bowels began to act copiously, and continued thenceforward to act daily three or four times. With this his stomach appeared to be completely set right, so that at the expiration of a week he really seemed perfectly well; he did not experience a feeling of indigestion. I held out to him that if he would pursue the same system for some months, he might reasonably hope to get rid of his dyspepsia permanently. He promised to do this as far as he could at home, but he told me that in a month he must return to England. However, he continued perfectly well, till I left Marienberg for Mühlbad; then having not long to stay abroad, he remained where he was. And he had not fallen back much before he left for England, though he had committed two or three imprudences, the greatest of which was suffering himself to be persuaded to do more than I had ordered for him.

A gentleman, aged fifty-four, was under my care, living at an hotel in Boppard, from May to September, 1844. He led a life of active military service in different parts of the world. The first part of his case (threatening pareplegia) I will give in his own words.

"Since 1817, I have had almost constant derangement of the stomach and bowels, frequently attended by temporary loss of memory and the power of articulation, frequently a nervous twitching of the skin, and momentary shocks like electric shocks descending down the left leg generally from the stomach to the foot. Medicine had little effect upon me, and only seemed to aggravate the illness.

"In 1825, I got my stomach, bowels, and strength into good order by a course of Cheltenham waters aided by warm baths and sulphuric acid foot-baths.

"From 1825 to 1830, I enjoyed tolerable health, although in a tropical climate.

"From 1830 to 1839, the damp climate of England, together with too much mental application and a sedentary life, again brought on derangement of the stomach and bowels. I tried various medicines without improvement, and was worse than before; I became very weak, and my limbs felt too heavy for me. I came now to Germany, and passed the winter of 1839 at Munich; followed there the

cold-water regimen so far as gently perspiring in bed, using cold ablution on getting out of bed, drinking four quarts of water daily, using the compress at night, and six hours out of doors exercise daily. My appetite returned, my bowels became perfectly regular, and my strength returned; I then found myself in better health than I had been in the fifteen previous years: still my stomach was not all right.

"During 1840, when in Ireland, my stomach and bowels again became much deranged from drinking *very bad water*. My sensations were a great oppression and weight at the lower part of the belly, with distension arising from wind, and costive bowels, with some slight difficulty in moving my limbs quietly."

This patient's annoyances now became aggravated by irritability of the bladder from enlarged prostate. Then in August, 1842, he went to Laubbach, and recommenced the water-cure in form.

"In a week from the commencement," he adds, "my bowels became regular and the motions firm. Immediately after the full bath, the douche and sitz-bath, I felt my strength and facility of moving the limbs increased, but the weakness generally returned in an hour or two afterwards." Then he was unfortunate. He took too much exercise for his nervous power, and drank too much water for his enlarged prostate, and after few weeks his legs became weaker, stiffer, and requiring a strong exertion of the will to get them on at all, and his bladder became extremely irritable, but his bowels continued right. Then he tried, the next spring, the mineral waters at Homburgh, which disagreed with him; and not long after he had a severe enteritic attack. The autumn and winter he passed at Bergen, pursuing another course of treatment; which failing, he came to Boppard in May 1844, weakened and with all his symptoms aggravated. They consisted of want of power on the tender extremities, felt especially at the hips, and most in the act of rising from a chair, weakness with painful stiffness, the bowels feeling distended and oppressed with the sense of contraction at the lower part of the abdomen.

Then he pursued the following course. At five, A. M., friction in the wet sheet, followed by packing in the blanket with a wet bandage round the belly; towards night

cold affusion and strong friction afterwards of the abdomen, loins, hips, and thighs. At twelve, either the douche or friction again in the half bath; the same repeated at six in the evening. He drank in the morning about six tumblers of water. Under this plan, each ofthe operations of which gave him an hour or more of renovation, he recovered his general health and strength; his hair grew thicker, and the weakness of the legs very sensibly diminished; on his best days he could now climb a hill with tolerable ease. He left with the conviction that the method he was following suited him better than any he had recently tried.

4. The sedative course.

It has been observed that the first effect of cold is to depress the nervous and circulatory systems. For I have not thought it worth while to separate from the combined effect on the two systems, the peculiar stimulating agency of cold on the nerves, best proved by Dr. Copland's success in restoring by cold affusion animals rendered insensible by prussic acid. I have merged the latter result in the general tonic effect manifested when reaction arrives. The general effect of cold on the frame is certainly depressive; but hitherto this first effect has been contemplated only as far as it leads to another and secondary result, namely, the return of warmth, and general excitement and invigoration. But there are cases in disease, where the production of the first effect is directly salutary, and where the secondary result would be mischievous. The cases referred to present these features: the circulatory and nervous systems, one or both, are in a state of unusual excitement. Then the object of the hydropathic treatment suited to them, is to apply cold with sufficient intensity or duration to subdue that excitement and to preclude reaction, using the sedative without the stimulating agencies of the cold-water cure.

Therefore, the douche, exercise, and for the most part friction, are excluded from the idea of this treatment; but packing in the wet sheet or blanket may form a part of it.

Then the sedative treatment presents the following varieties; it may consist in

1. Cold affusion.

2. General or partial immersion in cold water for a period from half a minute to three hours or more.

3. Packing in the wet sheet, to be renewed as soon as the bodily heat has reached its full pitch again; for instance, every twenty minutes for several hours consecutively.

4. Long continued immersion in cold water, succeeded by packing in the blanket.

Cases admitting the application of the sedative course, are, fevers, inflammations, spasmodic affections of the voluntary muscles, mental excitement, delirium, insanity.

The application of cold affusion in fevers and in the exanthemata, was made by Dr. Currie, on so extensive a scale, and crowned with such success as to make it a matter of wonder, that physicians, who united in believing and applauding his statements should have been afraid to adopt his practice.

It appears certain from the facts stated by Dr. Currie, that ordinary and even malignant fevers are capable of being cut short during the first, second, and even the third day from their development, if, the opportunity being taken of the temperature of the skin being raised above the natural standard and the skin itself dry, four or five buckets of very cold water are poured over the patient. The operation is to be repeated daily on the manifestation of any symptom of fever.

It further appears, that the progress of the exanthemata, and of the advanced stages of fever, admits of being greatly mitigated by the use of cold affusions, cold ablutions, cold sponging. As I have not had an opportunity of seeing this practice tried, I can only refer the reader to Currie's reports, for examples of its employment.

I have, however, little doubt that Dr. Currie's practice of *cold affusion*, except that the *salt* water which he used is certainly unnecessary, is preferable to the more elaborate hydropathic manner of applying cold in fevers, when the object is to cut the fever short. On the other hand, in the advanced stages of fever, and for the exanthemata, it is probable that packing in the wet sheet may prove the best practice.

Again, in rheumatic fever, it is probable that reiterated

packings in the wet sheet, each prolonged till perspiration has begun, are the proper basis of treatment.

The same, it may be anticipated, will be found to be the appropriate practice, if hydropathy be applicable to the treatment of hectic fever and symptomatic fevers generally.

The efficacy of hydropathy in inflammation, is far more questionable than in fever. Yet in inflammation of the brain, and of the abdomen, in some cases of acute phlegmon, as of the hand after wounds in dissection, there is no doubt that the continued application of ice or iced-water, has been of the most salutary effect. But it appears to me that this whole field has to be gone over anew. It is probable that more cases of acute inflammation can be treated by the direct application of cold than one would have ventured to imagine possible. Priesnitz is said to have cured croup in an advanced stage by taking thus all heat out of the body of a child, but that necessary barely to keep it alive. Till the experiment has been scientifically tried, we do not know how far it may answer to *let heat* instead of *letting blood*, in inflammations.

The efficiency of the cold-bath in spasmodic affections has been occasionally evinced in tetanus. But what would be the effect of repeated packings in the wet sheet wrung out of iced-water?

It cannot be doubted that a judicious employment of hydropathy in cases of insanity would be of service. But its use must, of course, be secondary to general management and moral discipline. So the experiment can only be well conducted in an establishment appropriated to the care of the insane. I have seen it made elsewhere with miserable failure. Then to be sure everything was in my opinion ill done. One patient was allowed excess in diet, and the stimulation of unfit society, and underwent the most exciting form of hydropathy besides. From being foolish and cheerful, he became gloomy, morose, his countenance injected with blood, and the end was that he was picked up in the road insensible and paralytic; in ten other cases the injudicious treatment was confined to the use of stimulating hydropathic means.

But let us suppose a patient under the skilful hand of

a physician versed in the treatment of insanity. Then one can hardly doubt that in many cases the mere alterative course of the cold-water cure would be of service. But specifically—to tranquillize the brain, one would confidently expect that the use of the sitz-bath, with or without a cold compress to the head; or prolonged immersion in the half bath, perhaps with gentle friction to soothe and occupy the attention, not to excite;—or prolonged immersion in the fall-bath followed by packing in the blanket, to restore in the least exciting way the animal warmth—would under appropriate circumstances, prove most powerful adjuventia.

I look back at what I have written, and consider it in a double light, in reference to medicine, and in reference to pure hydropathy.

In reference to medicine, I am fully satisfied. I have shown, with no attempt at a falsely scientific colouring, but simply and practically, how many cases, which were imperfectly relieved by medicine, can be restored by a system of cold bathing, and certain accessories used upon the intelligible principles of ordinary medical treatment.

In reference to the cold-water cure, I am less satisfied. I believe, indeed, that I have spoken the truth; and that in sifting and classifying its different agencies, and ordering them as auxiliaries of medicine, and part and parcel of one healing art, I am fairly reclaiming for medicine her own. For the first essays in the art of healing were but chance findings improved by that instinct of experiment, which even the savage possesses. And now, when she has no longer blindly to feel her way, but the light of science is shed on her path, so that much that she can accomplish is positive and demonstrable to reason, she has a right to appropriate those discoveries to her use, which are produced by the same rude sagacity, which first gave her birth. Still some tribute is due from that art to those, who following not her scientific route of discovery, come by their mother wit upon untrodden ways, a knowledge of which contributes to her practical advance; some acknowledgment on her part of the merit of the "rude ingenium," and of what she is indebted

to it, which made, with no aid from her, so capital a step as the present. At all events, I am not satisfied to cut down hydropathy to the rules and ministration of medical practice without a tribute to the genius of the inventor, and without again looking for a moment at the cold-water cure, such as his penetration developed it, an original and substantive resource for the sick, independent of the medical art.

I believe that the therapeutic inventions of Priesnitz will prove of great benefit to humanity.

Then the system, administered empirically,—the cold-water cure, as it was with exaggeration, no doubt, but cleverly and usefully put before the public by Mr. Claridge, was, as its success showed, practically well adapted for a vast number of cases; the hardy course of water training, the still bolder management of serious illness, prescribed seemingly with no reference but to how much of the panacea the patient could bear, (and *that* the discriminating eye of the inventor seems generally to have measured with great exactness,) evidently contained so much that was sound, that it is greatly to be regretted so little accurate record of the facts will survive. It is a pity that the Austrian government, which wisely licensed his practice, had not saddled it with the condition of a faithful resident witness and reporter. As it is, Priesnitz, I learn from many hands, has changed his original practice, and the record of many a bold and often successful experiment is lost.

But still, there it exists,—its failures unheeded, its successes reverberated on the public ear,—the water-training for health, like the pugilistic training for strength and feats of endurance; and still to be pursued by those who desire to try it under the auspices of its inventor, and an experiment it must be well worth trying to many, the cold-water cure of Priesnitz. I do not profess to do the same things. I do not adopt and use it without modifications, which he would repudiate as hostile to the spirit of his method. But I take its elements and employ them my own way. Perhaps, if the prescribed routine had suited my own case, I might have been misled by it. But my own case was too serious, and could not be cured by the system with its errors; it happened to require and admit of, a part only of the

routine treatment; and in following this view, and looking to see how much each individual case of serious disease requires, the system has disappeared, and in the place of the cold-water cure, I discern only a more extended and scientific use of cold bathing.

There was one striking feature in the cold-water cure, which deserves, however, a further examination,—the production, namely, of artificial crises.

The general subject of crises in medicine forms an interesting inquiry. The theory is as old as the writings of Hippocrates. The Greek physicians supposed that in disease, the blood undergoes a concoction, a sort of fermentation, and purifies itself by throwing off the unwholesome leaven. And something equivalent to this, or which admits of being figuratively thus expressed, certainly often occurs. In many illnesses a sudden evacuation of some humour takes place, and the patient is forthwith relieved. It may be hæmorrhagic secretion, or watery secretion from the mucous membrane of the alimentary canal, or an altered and increased flow of urine, or copious perspiration, or suppuration in abscesses or boils. However the material eliminated differs in different instances, certain it is, that the system is relieved simultaneously with its appearance; the disorder has been critical; it has been the means of the patient's recovery. And physicians countenance this doctrine, and upon the faith of experience look forward to the occasional development of beneficial crises. So far the received opinions in the profession would lead one to regard with favour, means calculated to bring out in disease changes of the character of these above instanced.

It must, however, be borne in mind, that changes similar to those which constitute beneficial crises often arise in disease with another result, being then no part of a series of events tending to relief—but being direct aggravations of the patient's ills. Some of them, indeed, we may indulgently consider as well meant, but abortive crises. But others have not conceivably any such purpose, but are simple manifestations of further rooted, more widely spread morbid action.

So that a physician, on the occurrence of this phenomena, has still to wait for the event to enable him to

class them rightly. There are, in short, false crises as well as true. Which is which, the end only shows. And when a method of treatment professes to produce crises, the question still remains for examination, are they salutary or otherwise,—the crises so produced,—are they true or false? Then which of these characters belongs to the hydropathic crises? Have they a direct and salutary relation to the disease itself, or are they only workings of the remedy on the system of the patient irrespective of the disease? On the latter supposition may they not still be beneficial? or are they positively detrimental?

To arrive at a solution of these questions, I will lay before the reader some instances of hydropathic crises, with the considerations they suggest.

An English baronet, about thirty years of age, sent for me from Marienberg, in September 1842, in these circumstances. He had arrived about three weeks before at an hydropathic establishment, his constitution generally impaired, but more immediately suffering from articular rheumatism. He had commenced a moderate and judicious course of treatment; however, his illness was apparently gaining ground, and the physician of the establishment counselled his immediate removal to Wiesbaden. He was pale and worn, with a furred tongue, a hot moist skin, and frequent pulse, and several joints were swelled and painful. But during the last few days an inflammatory swelling had been forming on the outside of the right thigh above the knee-joint and unconnected with it; and I was told that when packed in the blanket the patient's very profuse perspiration had a strong and peculiar odour. So I set the two last symptoms down as critical, and believing the course the patient had pursued up to that time to be really doing him good, and that no alteration was likely to improve it, and that in a few days he would be materially better, I recommended him to stay where he was, and quietly to go on as before; but to poultice the swelling on the thigh to bring it forward to suppuration. The event answered my expectation. In a few days the patient was relieved every way; the abscess was opened and discharged freely, and continued some days to discharge; the quality of the perspirations altered; the pain and swellings of

the joints subsided; he became rapidly convalescent, and in six weeks was well.

A gentleman, towards sixty years of age, hale and of a sound but not vigorous constitution, was at Marienberg in the summer of 1842, for muscular rheumatism, principally affecting one thigh and hip, which had troubled him for years. He had taken many means to get rid of this complaint ineffectually; and once during a previous summer he had made the whole of the thigh raw by means of an extensive mustard cataplasm, the effects of which had kept him in bed a month. But at the end of this discipline he was no better. This gentleman pursued the following course: he was packed in the blanket and took the full bath in the morning, and a douche and a sitz-bath in the fore and afternoon. Then as far as his general health was concerned he became better, but the rheumatic pains increased, indeed were much more severe, and he could not walk nearly as well as before—so he kept a wet compress applied to the hip and thigh; when, whether promoted by this remedy or not, there came out upon the skin of these parts a thin crop of vesicles, which ran a course like the shingles; and on their drying up, he became better; and he mended progressively from that time till he went away, a few days after. It was about the same in my own case, that a similar affection of the skin manifested itself on the back of the neck and shoulders; and certainly after its subsidence I thought my neck and shoulders were less stiff and free from pain.

Such instances, as I have thus given, are by no means of uncommon occurrence in hydropathic practice. The critical events seem to be the consequences of that practice, and are to all appearance beneficial, and first causes of the amendment, which follows. Then it would appear that some, at least, of the hydropathic crises are salutary or true crises; and their occurrence a ground for advocating the practice, and their encouragement an end in it.

But cases occur of a different complexion.

I have already adverted to the case of the Rev. Mr. G——, and to the remarkable benefit which he appeared to derive upon first trying hydropathy. But as the treatment was carried out, this patient was attacked with a crisis: several boils formed attended with pain and con-

stitutional irritation, which quickly undid the good which had been before obtained, and reduced him to his pristine state of weakness. He left Marienberg, when this outbreak of boils was still in progress, and died a few weeks after.

A gentleman, aged seventy-three, went to Marienberg in June, 1843, under the following circumstances. Three years before he had had a paralytic stroke, from the greater part of the effects of which he had in a very short time recovered. Now for more than two years he had been, as regarded the palsy, in a stationary condition. But the whole of his symptoms amounted to a slight weakness of the right arm and leg, with a shade of numbness of the hand and foot. Otherwise he was perfectly well; his digestion was good; he slept well; his complexion was hale; he was perfectly upright, and bore no look of age; he could take exercise, and had been used before leaving London to walk daily into the city. It was injudicious enough on his part to think of trying to better this state of things at his age by any treatment. However, he sought, and was put upon the cold-water cure, beginning it gradually; but after a while, he was packed in the blanket and sweated, going through a regular course of discipline. He told me afterwards that he had felt sensibly the worse for every bath he took; but he was infatuated enough to pursue the system for several weeks; in the course of which he became altered in appearance, lost strength and his upright figure, and experience dincreasing numbness of his foot and hand, contraction of the muscles of the leg and growing inability to walk. At the same time, a very large and angry boil, and several large pustules, formed on the arm of the affected side near the wrist. Then he began to think that things were not going on right; and he meditated going from Marienberg to Graefenberg to try the cold-water cure at the fountain head; but some common friends persuaded him instead to come to me at Mühlbad, where I had great difficulty in patching him up by general medical care before I could safely send him on his journey home to England, satisfied to try no more hydropathy.

These two cases, which have been last narrated, agree in these features: in each a crisis was produced by the cold-water cure; in each the patient was the worse for it;

at the same time the crises were of that kind,—the suppurative, namely, which is commonly held to be the most efficacious. Then, crises even of the best form produced by hydropathy may be false or detrimental crises.

But there is a way through the objection founded upon these cases. The class to which they belong should be excluded from the general discipline of the cold-water cure. Persons advanced in age, or with constitutions undermined by certain illnesses, have not vigour to sustain the lowering effects of crises, but are likely to fall a sacrifice to them. Some of Priesnitz's success is owing to the discrimination and honesty with which he has rejected unsuitable cases. The objectionableness of a practice capable of producing crises in such instances is no argument against its use in persons less advanced in life and of greater stamina.

Then let me give a third batch of instances.

A French officer went to —— in June, 1843, for rheumatism and psoriasis. He was between forty and fifty years of age, of much strength of body and constitution, of a full habit, having besides his rheumatism, or as part of it, some uneasy sensations in his head, and a tettery eruption on the hands and behind the ears. He was put upon a full course of treatment, and after a little made to sweat twice a day. In the first few days he experienced some inconvenience from an abscess, which formed in the ear. After a few weeks he had a fierce papular eruption over the arms and legs and body, which was encouraged to the utmost; he lay in bed a week with wet compresses constantly applied, the eruption formicating and burning furiously, and the irritated skin at last discharging a reddish glair. He was a person of great courage, and bore this suffering heroically, not with faith, but with a determination having begun to go through with it, and to do all that he was bid. In time, the irritability of the skin was completely exhausted, and the artificial eruption gave in; the skin grew cooler, but remained thickened and tingling. The patient appeared to have derived no benefit from this discipline, either immediately, or some weeks after.

Colonel G——, a French officer, about forty years of age, communicated these facts of his case to me. He had suffered several years with what had been called nervous

rheumatism, numbness of his limbs, with pain, and cramps; I could not well decypher the malady itself through his account of it. However, it had caused him great alarm, and threatened to render him a cripple. He had followed a great variety of plans without relief, when he went to Graefenberg in the summer of 1843. There he pursued the following treatment, by which it is to be observed, that at the end of two months he thought he was satisfactorily regaining his health.

At five A. M., he was packed in a damp sheet; at six, he was unwrapped and plunged into the full bath once, having previously wetted his face and chest; he then stepped out, and was for half a minute strongly rubbed with the hand by his own servant and the bath attendant together. He then took a second plunge, and splashed about in the water for another minute; came out, was dried, walked as well as he could, and drank three tumblers of water before breakfast.

At eleven A. M., he took a douche at first for two, afterwards for five minutes, then walked again and drank water. At twelve, took a sitz-bath for ten minutes, and walked. At five P. M. was again wrapped up, and took the bath as in the morning.

At nine P. M., previously to going to bed, either his feet alone were well rubbed with a wet towel and afterwards carefully dried, or the whole body was rubbed in a wet sheet.

After a week of this treatment, Colonel G—— had experienced sensible improvement: in two months, as I have stated, he was getting well. Then he had a crisis. He had boils; and a general cutaneous eruption broke out on his body and limbs, the latter being encouraged to the utmost, as its occurrence had been promoted by the constant use of wet bandages round the body and thighs. The eruption and the boils were the cause of so much pain and constitutional irritation, that he gradually lost all the ground he had before gained; and he assured me, that at the expiration of the third month he had so far fallen back, that he was no better than when he first went to Graefenberg; his former sensations, and cramp and all had returned. He then determined he would follow the treatment prescribed no longer; so he had his body soothed by warm baths, abandoning the cold compresses

and the rest. The critical eruptions and the boils then got well; but for some time the disposition to the formation of boils remained. Thus taught by experience, and following a very moderate hydropathic course, when I saw him, he was again recovering fast from his relapse and his complaint.

In the two cases which have been last narrated, there was nothing in the constitution of the patients unfitting them for being made the subjects of crises; and the complaints they laboured under are just of the kind reported to be relieved by crises. But what happened? crises occurred, and they were either useless or mischievous. Then the occurrence of crises in hydropathy under the most favourable circumstances with a beneficial result, is very problematical; for it is just a chance whether the changes that supervene with the character of crises prove salutary or otherwise. Then arises the practical question, are the crises thus produced sufficiently often salutary to make the risk worth encountering of the occurrence of false crises? My own impression is in the negative. I believe, from what I have seen and heard, that the greater number of crises in hydropathy are not beneficial to the patient; therefore I am by no means disposed to recommend a practice directed to their production. And this unwillingness to aim at the production of hydropathic crises, is converted in my mind from a general impression into an imperative rule, when I couple with the above remarks, the facts, first, that a large proportion of cases got cured without any crises at all; the second, that salutary crises follow very moderate treatment as often as they follow violent and forcing treatment. So that, practically, I feel myself thus influenced by the possibility of crises occurring in hydropathy—the fact makes me not the bolder, but the more cautious in its use; and before ordering hydropathic treatment I consider seriously whether the patient would be likely to suffer in the event of a crisis supervening; and in general I am in hopes that none will manifest itself. However, I do not deny that there are a few cases of obstinate disease, not yielding to gentle measures; in which it is good practice to push the hydropathic treatment to the utmost, and force some critical event: as in medicine some extreme measure, a course of mercury, for instance, is occasionally on

similar grounds prescribed, extreme measures being allowable in a desperate case, where ordinary means have failed. Then it remains to consider the particular events which are called crises in hydropathy; in a new light, however, not as things to be encouraged, but for the most part to be deprecated. Let me explain in what they consist, and how they are to be managed.

Now in managing hydropathic crises, I am guided by these principles :—

First: if they are efforts of nature, they had better not be interfered with; that is to say, they had better not be treated by means which would aggravate them. On this supposition nature has taken the case into her temporary management: then let it be left to her.

Secondly: as these events have been brought on by the treatment, persistance in the same measures is generally likely to aggravate them; on this ground likewise, the former treatment may require, on the supervention of a crisis to be abandoned.

Thirdly: as, however, the former treatment is supposed to be otherwise beneficial to the patient, it is not to be unnecessarily abandoned: it is to be persisted in, unless the critical events it threatens would become injurious to the patient upon its continuance.

Fourthly: it is desirable, if it can be done, to distinguish among the critical events in hydropathy those which have oftener the character of true crises from those which are spurious, and carefully to direct every means to check or prevent the occurrence of the latter.

Fifthly: in those critical events, which having commenced, must needs run a certain course, such as boils and abscesses, it is impossible to suppose that any good can be gained to the patient from the pain which attends them; therefore means calculated to soothe and tranquillize, even if they have to be sought in drugs, cannot be objectionable.

Then the disorders, which have to be considered, may be arranged under the heads of common effects of cold, aggravations of the original complaint, boils and abscesses, eruptions upon the skin, altered secretions.

1. The hydropathic treatment is to a certain extent a protection against cold, and upon the whole renders the

body less susceptible of atmospheric changes. Or if cold is taken, its effects are slight, as a profuse perspiration the following morning, with a briefer immersion than usual afterwards, will commonly get rid of the stuffed head, or sore throat, or stiffness of the neck, or feverish headache, which cold may have occasioned.

But at the change of weather severe inflammatory colds and bronchitis, or complete febrile indisposition, are liable to supervene, (the excited state of the system seeming to give virulence to the attacks sometimes,) especially in those who do not clothe themselves to suit the change, or expose themselves as before, and think that a wet head of hair and the same length of time in the baths are as innocent in cold and rain as in warm dry weather; and become, as they look, really cold and wet through at last. Then a smart attack of indisposition follows; and in general these attacks, besides their general weakening effect, stir up and aggravate the first complaint. Care should therefore be taken to prevent their recurrence, when they supervene. For the latter purpose, bathing had better be entirely suspended; the patient lying down the greater part of the day, being kept warm with clothing, his room kept warm, and his diet reduced; with any special means besides, which the case requires, and medicine can serve.

2. A second occasional effect of the treatment, which is liable to be represented as favourable, when it is the reverse, is an aggravation of the patient's original complaint. It is needless to say, that in all but a few cases, which admit of specification, such seeming harm is real harm. The only exceptions in which I believe, are aggravations of rheumatic muscular pains, the temporary increase of skin disease, and some local effects on the kidneys, bladder, and great intestine.

3. The most approved form of hydropathic crises consists in boils and abscesses.

Indolent boils occasionally form, which giving very little pain, sometimes remain stationary for weeks, and if they suppurate, yield but a small core. Something of the same sort of inflammation is liable to appear on the hands and fingers and about the roots of the nails, where it is attended with itching and burning, with something of the appearance of chilblains.

The boils produced are often common boils. Often, however, they have a much more inflammatory character, and are attended with very severe pain and feverishness, with much tumefaction and prominence of the part, the slough of cellular membrane being large, and the discharge of matter eventually copious. These boils are most painful when they occur on the hands and feet.

Occasionally, but much more rarely, the type assumed is that of common phlegmonous abscess.

There is no doubt that the occurrence of these affections during the hydropathic treatment is sometimes followed by improvement. After illness there is a sort of nisus to recovery; the constitution is resistant at the time; and the recovery from a painful boil may so help to lift one a step higher, than before one was depressed through it. These affections are to be treated without reference to hydropathy, as surgeons treat abscesses and boils.

4. Another form of critical disorders consists in eruptions upon the skin.

They belong to two classes.

In one, the eruption, though provoked no doubt by the excitement of the skin, which the treatment determines, yet seems in part to spring from some general and inward change. So its appearance is preceded by more or less marked feverishness, and then a vesicular eruption appears which runs a definite course. This occurrence is probably salutary. It manifests itself in very different degrees and shades in different cases. Sometimes one or two clusters of vesicles, or two or three large bullæ alone show themselves. It is seldom necessary to intermit the treatment on this account.

The other form of eruption is the simple product of the skin irritation, which blanketting and bathing and rubbing have occasioned. Its occurrence just depends on the natural susceptibility of the skin; and not its occurrence only, but the annoyance it occasions. Some have extensive surfaces of the skin covered with papulæ without feeling it. The appearances presented by eruptions are various from this source.

Sometimes the eruption takes the form of a rash, looking not unlike urticaria, the skin rising in white itching weals; but from these when they are scratched, the cuticle

easily rubs off, leaving a surface which discharges serum, and then dries and heals. Sometimes this rash spreads over the whole of the body and limbs, the skin affected itching and burning, and being made raw with rubbing once or twice in twenty-four hours. This affection does no manner of good, and the sooner it is got rid of the better. For this purpose the general treatment may require to be suspended, and the patient had better bathe once or twice, or oftener, in tepid water. If any one part is particularly troublesome, cold compresses, changed every five minutes, will ease and remove the burning and itching there.

In other instances an eruption is produced looking like lichen, with which a pustular eruption may be mixed. If this does not itch and burn at night, and so disturb the patient's rest, it is of no consequence, and may not require any suspension of the treatment which has provoked it.

Where there have been boils or abscesses, or large pustules, these on opening sometimes spread into irritable ulcers. The latter must be treated, not with water dressing, but either with common salve or poultices.

A curious feature it is in the high pressure water-cure, that old scars burn and throb, and recently healed ulcers ulcerate anew, showing the extent to which the balance of nutrition and the agencies of growth are disturbed and searched and put in commotion. Then the ingenious fiction has been advanced, that there still existed disease in these ulcers, which is got rid of by their opening; and that then only, when they have so ulcerated and been healed anew, are they soundly healed, and the patient well of whatever they were at first. This is, I presume, nonsense.

5. After all, perhaps the most truly critical events produced by hydropathy, are increase and alteration of certain secretions.

A loose state of the bowels sometimes supervenes and lasts for several weeks. As long as the motions continue fecal, and are unattended with griping and heat, this may be viewed as beneficial; when the looseness degenerates into diarrhœa, it had better be stopped.

The perspiration sometimes has a peculiar odour. This may be regarded as a reason for continuing to pack daily.

The urine is occasionally much changed; sometimes for a few days loaded with salts; then again copious and transparent; sometimes blood passes with it; in the latter case the treatment must be narrowly watched.

Hemorrhoidal bleeding in like manner occasionally occurs.

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